

Senate
Senate Chamber
Room E3-262 Engineering Building
WEDNESDAY, December 1, 2010
1:30 p.m.
Regrets call 474-6892

AGENDA

I MATTERS TO BE CONSIDERED IN CLOSED SESSION - none

1. Report of the Senate Committee on Honorary Degrees

This report will be distributed to members of Senate at the meeting. Documentation will be available for examination by eligible members of Senate the day preceding the Senate meeting.

II MATTERS RECOMMENDED FOR CONCURRENCE WITHOUT DEBATE

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|----|---|----------|
| 1. | <u>Report of the Senate Committee on Curriculum and Course Changes [dated November 10, 2010]</u> | Page 3 |
| 2. | <u>Report of the Executive Committee of the Faculty of Graduate Studies on Course and Curriculum Changes [dated September 29, 2010] RE: Faculty of Kinesiology and Recreation Management, and Departments of Economics, Physiology and Curriculum, Teaching & Learning</u> | Page 95 |
| 3. | <u>Report of the Executive Committee of the Faculty of Graduate Studies on Course and Curriculum Changes [dated October 25, 2010] RE: Faculty of Graduate Studies and the Departments of Microbiology, Environment & Geography</u> | Page 98 |
| 4. | <u>Report of the Executive Committee of the Faculty of Graduate Studies on Course and Curriculum Changes [dated October 25, 2010] RE: Deletion of Courses not Offered in the Last Five Years</u> | Page 101 |

III MATTERS FORWARDED FOR INFORMATION

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| 1. | <u>Report of the Senate Committee on Awards</u> | Page 105 |
| 2. | <u>In Memoriam: Dr. Robert J. (Bob) Parker</u> | Page 113 |

IV REPORT OF THE PRESIDENT Page 115

V QUESTION PERIOD

Senators are reminded that questions shall normally be submitted in writing to the University Secretary no later than 10:00 a.m. of the day preceding the meeting.

VI CONSIDERATION OF THE MINUTES OF THE MEETING OF NOVEMBER 3, 2010

VII BUSINESS ARISING FROM THE MINUTES

VIII REPORTS OF THE SENATE EXECUTIVE COMMITTEE AND THE SENATE PLANNING AND PRIORITIES COMMITTEE

1.	<u>Report of the Senate Executive Committee</u>	Page 131
2.	<u>Report of the Senate Planning and Priorities Committee</u>	
a)	<u>Site Approvals related to Stadium Development and the Sport and Active Living Precinct</u>	Page 132
b)	The Chair will make an oral report of the Committee's activities.	
IX	<u>REPORTS OF OTHER COMMITTEES OF SENATE, FACULTY AND SCHOOL COUNCILS</u>	
1.	<u>Report of the Senate Committee on Admissions RE: Respiratory Therapy Program, School of Medical Rehabilitation</u>	Page 134
2.	<u>Reports of the Senate Committee on Instruction and Evaluation</u>	
a)	<u>Faculty of Engineering RE: New Regulation to Limit Time in the Preliminary Engineering Program</u>	Page 137
b)	<u>Faculty of Pharmacy RE: Dean's Honour List</u>	Page 138
c)	<u>Faculty of Arts RE: Dean's Honour List and Degree with Distinction, B.A. Integrated Studies Program</u>	Page 139
3.	<u>Correspondence from Vice-President (Research) RE: Proposal to Establish a Professorship in in Neurobiology Research</u>	Page 140
4.	<u>Correspondence from Vice-President (Research) RE: Periodic Review of Research Centres and Institutes Manitoba Centre for Hellenic Civilization</u>	Page 146
5.	<u>Report of the Senate Committee on the Calendar RE: Final Print Version of the Calendar</u>	Page 149
6.	<u>Course Changes in Excess of 9 Credit Hours RE: Clayton H. Riddell Faculty of Environment, Earth and Resources</u>	
a)	<u>Report of the Senate Committee on Curriculum and Course Changes</u>	Page 150
b)	<u>Report of the Senate Planning and Priorities Committee</u>	Page 155
X	<u>ADDITIONAL BUSINESS</u>	
XI	<u>ADJOURNMENT</u>	

Please call regrets to 474-6892 or meg_brolley@umanitoba.ca

Report of the Senate Committee on Curriculum and Course Changes – Part A - Submitted to Senate for Concurrence Without Debate

Preamble:

1. The terms of reference for the Senate Committee on Curriculum and Course Changes (SCCCC) are found on the website at:
http://www.umanitoba.ca/admin/governance/governing_documents/governance/sen_committees/497.htm. SCCCC is “to recommend to Senate on the introduction, modification or abolition of undergraduate programs, curricula or courses”.
2. Since last reporting to Senate, the Senate Committee on Curriculum and Course Changes (SCCCC) met on September 29, October 1, 8, 27, and November 10, 2010, to consider curriculum and course changes from Faculties and Schools.

Observations:

1. **General**

In keeping with past practice, most changes for departments totaling less than ten credit hours are forwarded to Senate for concurrence without debate. This is in accordance with the Senate’s recommendation approved July 3, 1973, that course changes would cease to go to the SPPC when the resource implications are intra-faculty. Deans and Directors are to assess the resource implications to the respective units when course changes are proposed. Major changes in existing programs are to be referred to the SPPC for assessment of resource implications.

2. The Committee commended the Faculty of Kinesiology and Recreation Management on the prompt and efficient response to the Committee’s suggestion to consolidate the numbering of the Faculty’s courses. The Committee had expressed concerns in the last round of meetings regarding courses which were being taught at the same time, with the same instructor, but which carried more than one course number. The consolidation of these courses will lead to a streamlining of course offerings which will benefit students and staff.

3. **Faculty of Agricultural and Food Sciences**

In response to changes in the Department of Economics, the faculty is proposing a modification to the faculty core requirement, replacing ECON 1200 with ECON 1010 and ECON 1020.

The faculty is proposing the deletion of two courses: **AGEC 2500 Population Genetics** (3) and **AGEC 4540 Agroecology Research Project** (3); and the introduction of one course: **AGEC 4550 Agroecology Research Project** (6); and program modifications to the Agroecology program.

Biosystems Engineering

The department is proposing the deletion of two courses: **BIOE 0680 Shop Methods** (4), and **BIOE 2050 Metal Working Methods** (3); and the modification of one course: **BIOE 3530 Engineering Fundamentals** (3).

Plant Science

The department is proposing the introduction of one course: **PLNT 1000 Urban Agriculture** (3); and the modification of one course: **PLNT 4610 Bioinformatics** (3).

Soil Science

The department is proposing the modification of one course: **SOIL 4060 Physical Properties of Soils** (3).

4. School of Art

The school is proposing the modification of three courses: **FA 1020 Mathematics in Art** (3), **STDO 3490 Photography 2** (6), and **STDO Advanced Photography 1** (9).

5. Faculty of Arts

Department of Anthropology

The department is proposing the modification of one course: **ANTH 2500 Culture, Environment, and Technology** (B) (3).

Asian Studies Program

The program is proposing the introduction of one course: **ASIA 3792 Linguistic Analysis of Japanese** (3) and the addition of this course to List A – Asian Languages.

Canadian Studies Program

The program is proposing modifications to the list of approved courses.

Central and European Studies Program

The program is proposing modifications to the list of approved courses.

The Changing Workplace Concentration

The faculty is proposing the introduction of a concentration to be available as an option to students in the B.A. Integrated Studies program.

Department of Classics

The department is proposing the deletion of six courses: **CLAS 3610 Greek Literature in Translation** (3), **CLAS 3620 Latin Literature in Translation** (3), **CLAS 3690**

Studies in Classical Literary Genre 2 (3), CLAS 3700 Studies in Classical Literary Genre 3 (3), CLAS 3720 Aspects of Classical Culture 2 (3), and CLAS 3730 Aspects of Classical Culture (3); the introduction of two courses: CLAS 2612 Greek Literature in Translation (3) and CLAS 2622 Latin Literature in Translation (3).

Department of Economics

The department is proposing the deletion of two courses: **ECON 1200 Principles of Economics (6)**, and **ECON 3370 Public Finance (6)**; the introduction of four courses: **ECON 1010 Introduction to Microeconomic Principles (3)**, **ECON 1020 Introduction to Macroeconomic Principles (3)**, **ECON 3374 Public Expenditure Analysis and Policy Evaluation (3)**, and **ECON 3376 Economics of Taxation, Tax Policy and Inter-government Public Finance Issues (3)**; and the modification of two courses: **ECON 1210 Introduction to Canadian Economic Issues and Policies (3)** and **ECON 1220 Introduction to Global and Environmental Economic Issues and Policies (3)** and program changes.

Department of English, Film, and Theatre

The department is proposing changes to the English Program notes, the English list of courses satisfying Literature Prior to 1900, and the Film Studies List A.

Department of French, Spanish and Italian

The department is proposing the introduction of five courses: **FREN 2642 Special Topics (B) (3)**, **FREN 2770 Littératures francophones d’Afrique et des Antilles (B) (3)**, **FREN 3842 Special Topics (B) (3)**, **SPAN 1262 Intermediate Spanish Grammar and Conversation 1 (3)**, and **SPAN 1272 Intermediate Spanish Grammar and Conversation 2 (3)**; the deletion of two courses: **SPAN 1260 Intermediate Spanish Language Review (3)**, and **SPAN 1270 Spanish Oral 1 (3)**; the modification of eleven courses: **SPAN 1180 Introductory Spanish (6)**, **SPAN 1190 Introductory Spanish 2 (3)**, **SPAN 1280 Spanish for Native Speakers (3)**, **SPAN 1290 Accelerated Intermediate Spanish (6)**, **SPAN 2200 Spanish American Culture and Civilization (3)**, **SPAN 2510 Survey of Spanish Civilization (3)**, **SPAN 2520 Introduction to Spanish Literature (3)**, **SPAN 2540 Spanish American Literature 2 (3)**, **SPAN 2550 Advanced Spanish Composition (3)**, **SPAN 2560 Advanced Spanish Conversation (3)**, and **SPAN 2580 Contemporary Spanish Female Playwrights (3)**. In addition, the department proposes modification to Spanish programs and the Italian Studies List A.

Department of German and Slavic Studies

The department is proposing the deletion of two courses: **RUSN 2350 Russian Women’s Writing from the 1950s to the Present Day (3)**, and **RUSN 2750 Contemporary Russian Literature and Film (3)**; the introduction of two courses: **RUSN 2310 Exploring Russia through Film (3)**, and **RUSN 2410 Russian Literature after Stalin (3)**; and modifications to the Russian Program Notes.

Global Political Economy Program

The program is proposing program modifications and changes to the list of suggested electives.

Labour Studies Program

The program is proposing the introduction of one course: **LABR 3050 Issues in Occupational Health and Safety and Workers' Compensation** (3); and modifications to the list of electives.

Native Studies Program

The program is proposing the introduction of two courses: **NATV 2110 Introduction to Aboriginal Community Development** (3), and **NATV 3160 Fundraising for Aboriginal Organizations** (3); and the modification to the Native Studies Advanced Major Aboriginal Governance Stream.

Department of Philosophy

The department is proposing the modification of one course: **PHIL 2820 Existentialism** (3); and the modification of 6 courses in response to course introductions at the Collège universitaire de Saint-Boniface.

Department of Sociology

The department is proposing the deletion of one course: **SOC 3870 Social Inequality** (3); the introduction of two courses: **SOC 2450 Sociology of the Body** (3), and **SOC 3890 Power and Inequality in Comparative Perspective** (3); and a modification to the Sociology Advanced Major program.

Ukrainian Canadian Heritage Studies Program

The program is proposing a modification to List A.

Women and Gender's Studies Program

The program is proposing a modification to List A.

6. Faculty of Dentistry

School of Dental Hygiene

The School is proposing the deletion of two courses: **HYGN 4480 Professional Practice Management and Leadership** (2) and **HYGN 4450 Community Health Practicum** (2); and the introduction of two courses: **HYGN 4410 Dental Hygiene Practice Management and Leadership** (3), and **HYGN 4460 Community Health Independent Study** (3).

7. Faculty of Education

The faculty is proposing the introduction of one course: **EDUB 5012 Video Art, Culture and Education** (3).

8. **Faculty of Engineering**

Preliminary Engineering Program

The faculty is proposing to modify this program by replacing COMP 1010 with COMP 1012.

Department of Biosystems Engineering

The department is proposing the introduction of a Minor in Agribusiness and the introduction of four additional specializations: Agricultural Specialization, Bioprocessing Specialization, Environmental Specialization and Sustainable Building Specialization. The department is also proposing to replace one course in the core program. The department is proposing the modification of three courses: **BIOE 4240 Graduation Project (3)**, **BIOE 4390 Unit Operations 1 (4)** and **BIOE 4700 Alternative Building Design (4)**; and the deletion of one course: **BIOE 4400 Unit Operations 2 (4)**.

Department of Mechanical Engineering

The department is proposing the introduction of one course: **MECH 3602 Manufacturing Processes (4)**; the deletion of six courses: **MECH 3600 Manufacturing Processing: Applied Fundamentals (3)**, **MECH 2270 Principles of Engineering Materials (4)**, **MECH 2290 Manufacturing Engineering (3)**, **MECH 3480 Dynamics (3)**, **MECH 3540 Modern Engineering Materials (4)** and **MECH 4170 Program Management and System Engineering (3)**; and the modification of 18 courses: **MECH 2222 Mechanics of Materials (4)**, **MECH 2262 Fundamentals of Fluid Mechanics (4)**, **MECH 2272 Engineering Materials 1 (4)**, **MECH 3170 Project Management (4)**, **MECH 3482 Kinematics and Dynamics (4)**, **MECH 3492 Fluid Mechanics and Applications (4)**, **MECH 3550 Robotics and Computer Numerical Control (4)**, **MECH 3562 Introduction to Optimization (4)**, **MECH 3582 Manufacturing Planning and Quality Control (4)**, **MECH 3592 Simulation Modeling and Facilities Planning (4)**, **MECH 3980 Mechanical Laboratory (4)**, **MECH 4560 Selected Topics in Fluid Mechanics (4)**, **MECH 4650 Machine Design 4M (4)**, **MECH 4812 Automotive Engineering (4)**, **MECH 4870 Fracture and Failure of Engineering Materials (4)**, **MECH 4960 Manufacturing Process 1 (4)**, **MECH 4980 Mechanic Engineering Laboratory (2)** and **MECH 4990 Mechanical Engineering Laboratory 2 (2)**.

9. **Clayton H. Riddell Faculty of Environment, Earth and Resources**

Department of Environment and Geography

The department proposes various program modifications in response to proposed course changes (see SCCCC Report – Part B).

Department of Geological Sciences

The department proposes program changes in response to proposed course changes (see SCCCC Report Part B).

10. **Human Ecology**

The faculty is proposing the modification of one course: **HMEC 4090 Practicum in Human Ecology** (6).

Human Nutritional Sciences

The department is proposing the modification of two courses: **HNSC 4120 Senior Thesis** (3) and **HNSC 4122 Research Project in Human Nutritional Sciences** (6).

Textile Sciences

The department is proposing a modification to the Product Development Stream.

Interdisciplinary Health Program

The faculty is proposing the introduction of minors in Health Studies and Health Sciences.

11. **Faculty of Kinesiology and Recreation Management**

The Faculty is proposing a major consolidation of course numbers resulting in the deletion of the following courses: **PHED 2320 Human Anatomy** (3), **PHED 2330 Biomechanics** (3), **PHED 2540 Psychology of Sport and Physical Activity** (3), **PHED 3160 Pathology and Sports Medicine** (3), **PHED 3450 Motor Learning** (3), **PHED 3470 Exercise Physiology** (3), **PHED 3512 Principles of Fitness Training** (3), **PHED 3520 Coaching the High Performance Athlete A** (3), **PHED 3530 Coaching the High Performance Athlete B** (3), **PHED 4540 Advanced Topics in Sport Psychology** (3), **PHED 3740 Resistance Training and Conditioning** (3), **KIN 2400 Coaching Theory and Practice** (3), **KIN 2402 Advanced Coaching Theory and Practice** (3), **KIN 2740 Fitness Theory and Practice** (3), **KIN 3750/REC 3750 Lifestyle Activities** (3), **KIN 4710/REC 4710 Outdoor Education** (3), **KIN 4720/PHED 4720 Wilderness Adventures** (3), **KIN 3340/REC 3340 Philosophy of Physical Activity and Leisure** (3), **KIN 3350/REC 3350 Introduction to Research** (3), **KIN 3170/PHED 3170 Canadian Sport History** (3), **KIN 4630/REC 4630 Supervised Fieldwork Experience** (12), and **KIN 3830/PHED 3830/REC 3830 Wilderness Leadership** (3); and the introduction of five courses: **PERS 3340 Philosophy of Physical Activity and Leisure** (3), **PERS 3350 Introduction to Research** (3), **PERS 3170 Canadian Sport History** (3), **PERS 4630 Supervised Fieldwork Experience** (12), and **PERS 3102 Aboriginal Song and Dance** (3); and the modification of nine courses: **KIN 2320 Human Anatomy** (3), **KIN 3470 Exercise Physiology** (3), **KIN 3740 Resistance Training and Conditioning** (3), **KIN 3912 Athletic Therapy Practicum** (4), **KIN 3914 Clinical Block Placement** (2), **KIN 4460 Fitness Appraisal and Lifestyle Counselling** (3), **KIN 4500 Physical Activity and Aging** (3), **KIN 4560 Advanced Fitness Appraisal and Lifestyle Counselling** (3), and **KIN 4910 Athletic Therapy Practicum** (6).

The faculty is also proposing program modifications resulting from the proposed course changes.

12. **Asper School of Business - Faculty of Management**

Marketing Department

The department is proposing the modification of one course: **MKT 4210 Marketing Management** (3).

Interdisciplinary Management Department

The department is proposing the deletion of three courses: **IDM 2980 Co-op Work Term 1** (0), **IDM 3980 Co-op Work Term 2** (0), and **IDM 4980 Co-op Work Term 3** (0); and the introduction of three courses: **IDM 2982 Co-op Work Term 1** (1), **IDM 3982 Co-op Work Term 2** (1), and **IDM 4982 Co-op Work Term 3** (1).

Department of Supply Chain Management

The department is proposing the introduction of one course: **SCM 2240 Purchasing and Supply Chain Management** (3).

13. **Faculty of Pharmacy**

The faculty is proposing the deletion of two courses: **PHRM 3210 Principles of Professional Practice** (3), **PHRM 3510 Principles of Scientific Literature** (2); the introduction of two courses: **PHRM 3230 Principles of Professional Practice** (2), **PHRM 3520 Principles of Scientific Literature** (4), and program modifications to first and third year programs.

14. **Faculty of Science**

The faculty is proposing modifications to the honours degree requirements and the general degree coursework requirements.

Actuarial Mathematics Program

The program is proposing program changes resulting from changes in the first year Economics offerings.

Biochemistry Program

The program is proposing program changes resulting from changes in the Chemistry and Microbiology course offerings.

Department of Biological Sciences

The department is proposing the deletion of seven courses: **BIOL 2382 Toxicological Principles** (1.5), **BIOL 3330 Fungal Ecology** (3), **BIOL 3460 Environmental Physiology of Animals I** (3), **BIOL 3462 Environmental Physiology of Animals II** (3), **BIOL 4320 Ecological Methods** (3), **BIOL 4360 Models for Behavioural Ecology** (3), and **BIOL 4880 Analysis of Ecological Problems** (3); the introduction of five courses: **BIOL 3600 Biodiversity and Sustainability** (3), **BIOL 3350 Methods of Data**

Collection and Analysis in Ecology (3), BIOL 3340 Biology of Primitive Fungi and Allies (3), BIOL 3470 Environmental Physiology of Animals 1 (3), and BIOL 3472 Environmental Physiology of Animals 2 (3); and the modification of one course: BIOL 2390 Introductory Ecology (3). The department is proposing program modifications related to course changes.

Biotechnology Program

The program is proposing program modifications reflecting course changes in microbiology.

Department of Chemistry

The department is proposing the deletion of two courses: **CHEM 2380 Chemistry of the Main Group Elements (3)**, and **CHEM 3380 Inorganic Chemistry (3)**; the introduction of two courses: **CHEM 2400 Inorganic Chemistry: Structure and Applications (3)**, and **CHEM 3400 Inorganic Chemistry: Reactivity and Properties (3)**; and the modification of four courses: **CHEM 3570 Biophysical Chemistry (3)**, **CHEM 4570 Topics in Inorganic Chemistry (3)**, **CHEM 4600 Advanced Chemical Techniques (3)**, and **CHEM 4680 Organometallic Chemistry (3)**. The department is also proposing program modifications which reflect course changes.

Department of Computer Science

The department is proposing the deletion of one course: **COMP 4290 Compiler Construction (3)**; the introduction of one course: **COMP 1012 Computer Programming for Scientists and Engineers (3)**; the modification of four courses: **COMP 1010 Introductory Computer Science I (3)**, **COMP 1020 Introductory Computer Science II (3)**, **COMP 2130 Discrete Mathematics for Computer Science (3)**, and **COMP 2190 Introduction to Scientific Computing (3)**; and program modifications to honours and major entry requirements.

Genetics Program

The department is proposing program modifications to the option list for the Major and Honours degrees.

Department of Microbiology

The department is proposing the deletion of six courses: **MBIO 2280 Microbial Ecology (3)**, **MBIO 3440 Microbial Physiology (3)**, **MBIO 3480 Microbial Diversity (3)**, **MBIO 4320 Environmental Microbiology (3)**, **MBIO 4470 Fermentations (3)**, and **MBIO 4510 Industrial Microbiology (3)**; the introduction of four courses: **MBIO 3280 Microbial Communities (3)**, **MBIO 4440 Systems Microbiology (3)**, **MBIO 4480 Microbes in our Environment (3)**, and **MBIO 4520 Industrial Bioprocessing (3)**; and the modification of sixteen courses: **MBIO 1010 Microbiology I (3)**, **MBIO 2020 Microbiology II (3)**, **MBIO 2230 Introductory Biogeochemistry (3)**, **MBIO 2410 Essentials of Molecular Biology (3)**, **MBIO 3000 Applied Biological Safety (3)**, **MBIO 3010 Mechanisms of Microbial Disease (3)**, **MBIO 3030 Microbiology III (3)**, **MBIO 3410 Molecular Biology (3)**, **MBIO 3430 Molecular Evolution (3)**, **MBIO 3450 Regulation of Biochemical Processes (3)**, **MBIO 3470 Microbial Systematics (3)**,

MBIO 4540 Biological Energy Transduction (3), MBIO 4600 Molecular Genetics of Prokaryotes (3), MBIO 4602 Molecular Genetics of Prokaryotes - Lectures (3), MBIO 4610 Molecular Genetics of Eukaryotes (3), and MBIO 4612 Molecular Genetics of Eukaryotes - Lectures (3). The department is also proposing program modifications.

Department of Physics and Astronomy

The department is proposing program modifications.

Department of Statistics

The department is proposing program modifications for the statistics-actuarial joint honours and the statistics-economics joint honours in response to changes in the economics course offerings.

15. **Collège universitaire de Saint-Boniface**

Biology

The Collège is proposing the introduction of two courses: **BIOL 1411 Anatomie du corps humain (3)** and **BIOL 1413 Physiologie du corps humain (3)**.

Spanish

The Collège is proposing the introduction of two courses: **SPAN 3881 Violence, révolutions et dictatures dans la culture (3)** and **SPAN 3341 Grammaire et syntaxe de l'espagnol (3)**.

Economics

The Collège is proposing the deletion of one course: **ECON 1201 Introduction aux sciences économiques (6)**; and the introduction of two courses: **ECON 1011 Introduction à la microéconomie (3)**, and **ECON 1021 Introduction à la macroéconomie (3)**.

Philosophy

The Collège is proposing the introduction of six courses: **PHIL 2741 Éthique et biomédecine (3)**, **PHIL 2751 Éthique et environnement (3)**, **PHIL 2831 Éthique des affaires (3)**, **PHIL 2841 Éthique de la guerre et de la paix (3)**, **PHIL 2861 Philosophie du droit (3)**, and **PHIL 2871 La philosophie et le droit (3)**.

Translation

The Collège is proposing the modification of sixteen courses : **TRAD 3131 Terminologie bilingue et documentation (3)**, **TRAD 3141 Rédaction professionnelle I (3)**, **TRAD 4011 Atelier de traduction professionnelle (3)**, **TRAD 4101 Mémoire de terminologie (3)**, **TRAD 4231 Translation in the Social Sciences (3)**, **TRAD 4241 Legal Translation (3)**, **TRAD 4271 Scientific and Technical Translation (French-English) (3)**, **TRAD 4273 Traduction biomédicale et pharmaceutique (3)**, **TRAD**

4281 Adaptation publicitaire (3), TRAD 4361 Traduction spécialisée (anglais-français) (3), TRAD 4371 Specialized Translation (French-English)(3), TRAD 4381 Traduction en sciences sociales (3), TRAD 4391 Traduction juridique (3), TRAD 4411 Traduction scientifique et technique (3), TRAD 4421 Traduction économique et commerciale (3), TRAD 4501 Initiation à la localisation (3).

Recommendations

The Senate Committee on Curriculum and Course Changes recommends that curriculum and course changes from the units listed below be approved by Senate:

Faculty of Agricultural and Food Sciences

School of Art

Faculty of Arts

Faculty of Dentistry, School of Dental Hygiene

Faculty of Education

Faculty of Engineering

Clayton H. Riddell Faculty of Environment, Earth and Resources

Faculty of Human Ecology

Faculty of Kinesiology and Recreation Management

Asper School of Business, Faculty of Management

Faculty of Pharmacy

Faculty of Science

Collège universitaire de Saint-Boniface

Respectfully submitted,

Professor H. Frankel, Chair
Senate Committee on Curriculum and Course Changes

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Faculty of Agricultural and Food Sciences

Program modification:

4.1.1 Faculty Core

ABIZ 1000 Introduction to Agribusiness Management (see Note 1)
AGRI 1500 Natural Resources and Primary Agricultural Production
AGRI 1510 Production, Distribution and Utilization of Agricultural Products
AGRI 2030 Technical Communications
BIOL 1020 Biology 1: Principles and Themes (See Note 2)
BIOL 1030 Biology 2: Biological Diversity, Function and Interactions (See Note 2)
CHEM 1300 University 1 Chemistry: Structure and Modelling in Chemistry (See Notes 3)
and one of the following two courses:
CHEM 1310 University 1 Chemistry: An Introduction to Physical Chemistry (See Notes 3)
or
CHEM 1320 University 1 Chemistry: An Introduction to Organic Chemistry (see Notes 3)
~~ECON 1200 Principles of Economics~~
ECON 1010 Introduction to Microeconomic Principles
ECON 1020 Introduction to Macroeconomic Principles
MATH 1200 Elements of Discrete Mathematics
or
MATH 1210 Techniques of Classical and Linear Algebra
or
MATH 1300 Vector Geometry and Linear Algebra (See Note 3)
or
MATH 1310 Matrices for Management and Social Sciences
or
MATH 1500 Introduction to Calculus (See Note 4)
or
MATH 1520 Introductory to Calculus for Management and Social Sciences (See Note 4)
STAT 1000 Basic Statistical Analysis 1 3
Three credit hours from the following:
PHIL 1290 Critical Thinking (3)
PHIL 2740 Ethics and Biomedicine (3)
PHIL 2750 Ethics and the Environment (3)
PHIL 2830 Business Ethics (3) 3

Deletion:

AGEC 2500 Population Genetics Cr.Hrs. 3	-3
AGEC 4540 Agroecology Research Project Cr.Hrs. 3	-3

Introduction:

AGEC 4550 Agroecology Research Project Cr. Hrs. 6	+6
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Independent research project on an Agroecological topic. Students perform research and meet regularly with advisors. Progress reports are required, and final results are presented in written and verbal reports. Classes are held on professional topics. Not to be held with AGECE 4540 (or 065.454). Prerequisite: AGECE 3510 (065.351).

NET CHANGE IN CREDIT HOURS: 0

Program Modification:

The program proposes that AGECE 4550 replace AGECE 4554 in the core requirements for the B.Sc. Agroecology Degree program.

Biosystems Engineering

Deletions:

BIOE 0680 Shop Methods Cr.Hrs. 4	-4
BIOE 2050 Metal Working Methods Cr.Hrs. 3	-3

Modification:

BIOE 3530 Engineering Fundamentals Cr.Hrs. 3
(formerly 034.353) Principles of heat transfer, steam, psychometrics, fluid mechanics, material balances, electricity and refrigeration. Cannot be held for credit in the Faculty of Engineering. Prerequisites: [MATH 1300 or equivalent] and [MATH 1500 or equivalent] or the former MATH 1680 (136.168).

NET CHANGE IN CREDIT HOURS: -7

Plant Science

Introduction:

PLNT 1000 Urban Agriculture Cr.Hrs. 3 +3
Urban environments and their importance for food production, increasing biodiversity, and reducing pollution are presented. Topics include principles of vegetable, fruit and herb production, landscape plants, and utilization of natural systems for composting, water management and reduced pesticide use. Benefits to environment, community development, and human health are discussed.

Modification:

PLNT 4610 Bioinformatics Cr.Hrs. 3
An introduction to the theory, strategies, and practice of data management and analysis in molecular biology. Topics include DNA and protein sequence analysis, biological databases, genomic mapping, and analysis of gene expression data. The course will include problem-solving exercises using UNIX server-based software. Prerequisite: PLNT 2530 or the former 039.450 or PLNT 3140 or PLNT 4310 or the former PLNT 4540 or MBIO 3410 or consent of instructor.

NET CHANGE IN CREDIT HOURS: +3

Soil Science

Modification:

SOIL 4060 Physical Properties of Soils Cr.Hrs. 3
(formerly 040.406) Physical properties of soils and their relation to plant growth. Topics discussed include particle size distribution, soil water, soil structure, soil temperature, and soil aeration. Prerequisite: SOIL 3600 (or 040.360) or 040.350 or 040.351 or BIOE 2110 or consent of instructor.

NET CHANGE IN CREDIT HOURS: 0

School of Art

Modifications:

FA 1020 Mathematics in Art Cr.Hrs. 3

(formerly 054.102) Specific theory, structurizing systems, and mathematical methods and principles used in works of art from various historical periods and contexts will be explored in relation to Euclidean and non-Euclidean geometries. Topics include linear perspective; shapes, patterns, balance and symmetry; ratio, proportion, and harmony; and order, dynamics and chaos. The course will be one half art and one half mathematics, team-taught by faculty from the School of Art and Department of Mathematics. This course is also given in the Department of Mathematics as MATH 1020. This is a terminal course and may not be used as a prerequisite for other Mathematics courses. This course cannot be used as part of an Honours, Major, General or Minor program in the mathematical sciences. Not available to any student already holding a grade of "C" or better in any Mathematics course with the exception of MATH 1010 (136.101), MATH 1190, MATH 1191 (136.119). Not to be taken concurrently with any other Mathematics with the exception of MATH 1010, MATH 1190, or MATH 1192. Not to be held for credit with MATH 1020 (or 136.102). No prerequisite.

STDO 3490 Photography 2 Cr.Hrs. 6

Advanced instruction toward individual expression. (Major course) Prerequisite: a grade of "C+" or better in STDO 2400 (or 054.240) or STDO 2450.

STDO Advanced Photography 1 Cr.Hrs. 9

Continuation of Photography 1 (STDO 2400) or Digital Photography (STDO 2450), with emphasis on print quality and personal imagery. Prerequisite: STDO 2400 or STDO 2450.

NET CHANGE IN CREDIT HOURS: 0

Faculty of Arts

Department of Anthropology

Modification:

ANTH 2500 Culture, Environment, and Technology (B) Cr.Hrs. 3

(formerly 076.250) Study of ecological systems, focusing on processes of adaptation in societies differing in organization and in views of technology. Demographic and technological changes are examined in relation to cultural, political and ideological factors. Students may not hold credit for both ANTH 2500 (076.250) and ANTH 2430 (076.243). Prerequisite: [a grade of "C" or better in one of: ANTH 1220 (076.122) or ANTH 1221 (076.122) or ANTH 1520 (076.152) or the former 076.120] or written consent of instructor.

NET CHANGE IN CREDIT HOURS: 0

Asian Studies Program

Introduction:

ASIA 3792 Linguistic Analysis of Japanese Cr.Hrs. 3 +3

This course analyses structures and usage of the Japanese language, using linguistic methodology to understand the language and associated social, cultural, psychological, and cognitive factors. Prerequisite: [a grade of “C” or better in ASIA 2770 (150.277)] or written consent of instructor.

NET CHANGE IN CREDIT HOURS: +3

Program Modification:

Addition of ASIA 3792 Linguistic Analysis of Japanese to List A – Courses Acceptable for Asian Studies Credit

Canadian Studies Program

Modifications to the List of Approved Courses in Canadian Studies:

Addition of:

GEOG 2900 Geography of Canadian Prairie Landscapes (3)

GEOG 3900 Geography of Manitoba (3)

Notation that the following courses are no longer offered:

GEOG 2450 The Making of the Prairie Landscape (6)

GEOG 3700 Canada: The Making of the Human Landscape (6)

Central and European Studies Program

Modification to the List of Approved Courses in Central and East European Studies Program:

Addition of:

HUNG 1000 Introduction to Hungarian 1 (3)

HUNG 1002 Introduction to Hungarian 2 (3)

RUSN 2310 Exploring Russia through Film (3)

RUSN 2410 Russian Literature after Stalin (3)

Notation to list that RUSN 2750 Contemporary Russian Literature and Film (3) is no longer offered.

The Changing Workplace Concentration

Introduction of a concentration in the B.A. Integrated Studies program.

The Changing Workplace

Program Information

The Changing Workplace is a Concentration only available to students in the B.A. Integrated Studies degree program. This program is not available as a Minor program.

The Changing Workplace is an interdisciplinary concentration and has been developed in response to information received from employees and mid-career working adults interested in pursuing a degree. Successful completion of this concentration provides learners with an understanding of the workplace in its current context and its changing nature.

Concentration Program

For entry to the Concentration, the prerequisite is a minimum grade of "C" or better in the first 6 credit hours of courses required for the Concentration.

The Concentration in The Changing Workplace will consist of 18 credit hours from the following list of courses. Students must meet the departmental prerequisites for entry into any course in this list. No course can be used to satisfy more than one Concentration.

Faculty of Arts

Anthropology		
ANTH 2500	Culture, Environment, and Technology (B)	3
Economics		
ECON 1210	Introduction to Canadian Economic Issues and Policies	3
Labour Studies		
LABR 1260	Working for a Living	3
LABR 1290	Introduction to the Canadian Labour Movement	3
LABR 2100	The Political Economy of Labour	3
LABR 3060	Workplace Health and Safety	3
Philosophy		
PHIL 2830	Business Ethics	3
Sociology		
SOC 2390	Social Organization	3
NOTE: Specific course sections of ECON 2610 Special Topics in Economics (3) may satisfy the concentration requirement. Students should contact the Department of Economics for information.		
For course descriptions, see departmental listings.		

Department of Classics

Deletions:

CLAS 3610 Greek Literature in Translation Cr.Hrs. 3	-3
CLAS 3620 Latin Literature in Translation Cr.Hrs. 3	-3
CLAS 3690 Studies in Classical Literary Genre 2 Cr.Hrs. 3	-3
CLAS 3700 Studies in Classical Literary Genre 3 Cr.Hrs. 3	-3
CLAS 3720 Aspects of Classical Culture 2 Cr.Hrs. 3	-3
CLAS 3730 Aspects of Classical Culture 3 Cr.Hrs. 3	-3

Introductions:

CLAS 2612 Greek Literature in Translation Cr.Hrs. 3 +3
A survey in English of selected works of such major figures in Greek literature as Homer, Aeschylus, Sophocles, Euripides, Aristophanes, Herodotus, Thucydides, and Plato. The course includes discussion of these and other works on the arts and literature of the world. Students may not hold credit for both CLAS 2612 and the former CLAS 3610 (003.361).

CLAS 2622 Latin Literature in Translation Cr.Hrs. 3 +3
A survey in English of selected works of such major figures in Latin literature as Vergil, Ovid, Terence, Livy, Cicero, Horace and Seneca. The course includes discussion of the influence of

these and other works on the arts and literature of the world. Students may not hold credit for both CLAS 2622 and the former CLAS 3620 (003.362).

NET CHANGE IN CREDIT HOURS: -12

Department of Economics

Deletions:

ECON 1200 Principles of Economics Cr.Hrs. 6	-6
ECON 3370 Public Finance Cr.Hrs. 6	-6

Introductions:

ECON 1010 Introduction to Microeconomic Principles Cr.Hrs. 3 +3
This course introduces students to the study of microeconomics. Topics include: demand and supply, price determination, market structure and resource allocation; the behaviour of consumers and firms; and market intervention by government. Selected economic topics are examined such as: welfare programs, environmental regulation, the economics of discrimination, pay equity, and taxation. Students may not hold credit for ECON 1010 and any of: ECON 1011 or ECON 1210 (018.121) or ECON 1211 (018.121) or ECON 1220 (018.122) or ECON 1221 (018.122) or the former ECON 1200 (018.120) or the former ECON 1201 (018.120).

ECON 1020 Introduction to Macroeconomic Principles Cr.Hrs. 3 +3
This course introduces students to the study of macroeconomics. Topics include: aggregate performance and policy; the determinants of national income, employment and the price level, the role of monetary and fiscal policies in stabilizing the economy and promoting economic growth. Students may not hold credit for ECON 1020 and any of: ECON 1021 or ECON 1210 (018.121) or ECON 1211 (018.121) or ECON 1220 (018.122) or ECON 1221 (018.122) or the former ECON 1200 (018.120) or the former ECON 1201 (018.120).

ECON 3374 Public Expenditure Analysis and Policy Evaluation Cr.Hrs. 3 +3
The study of the role of government in the economy, government budget and expenditure evaluation issues, benefit-cost analysis, as well as government intervention regulation, public pricing, and ownership issues. Students may not hold credit for both ECON 3374 and the former ECON 3370 (018.337). Prerequisite: A grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270).

ECON 3376 Economics of Taxation, Tax Policy and Inter-government
Public Finance Issues Cr.Hrs. 3 +3
A study of the principles of taxation, tax policy in Canada and elsewhere, government deficit and debt issues and fiscal federalism with emphasis on inter-governmental finance issues. Students may not hold credit for both ECON 3376 and the former ECON 3370 (018.337). Prerequisite: a grade of "C" or better in ECON 2450 (018.245) or ECON 2451 (018.245) or ECON 2700 (018.270).

Modifications:

ECON 1210 Introduction to Canadian Economic Issues and Policies Cr.Hrs. 3
(formerly 018.121) A survey of some major principles underlying, and influences acting upon the Canadian economy and its regions. Students may not hold credit for ECON 1210 (018.121) and any of: ECON 1211 (018.121) or ECON 1010 or ECON 1020 or ECON 1011 or ECON 1021 or the former ECON 1200 (018.120) or the former ECON 1201 (018.120).

ECON 1220 Introduction to Global and Environmental Economic Issues and Policies Cr.Hrs. 3
(formerly 018.122) A survey of some major principles and policies characterizing the world economy and the environment. Students may not hold credit for ECON 1220 (018.121) and any of: ECON 1221 (018.121) or ECON 1010 or ECON 1020 or ECON 1011 or ECON 1021 or the former ECON 1200 (018.120) or the former ECON 1201 (018.120).

NET CHANGE IN CREDIT HOURS: 0

Program changes to reflect the above course changes.

- **Revisions to Economics General Major, Advanced Major, Minor, Honours Single, and Honours Double Programs**

Added material

Deleted material

7.8.1 Program Information

Major Program

For entry to the General or Advanced Major, the prerequisite is a grade of "C" or better in either ~~ECON 1200~~ or both ECON 1010 and ECON 1020 or both ECON 1210 and ECON 1220, or the former ECON 1200. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

Minor Program

For entry to the Minor, the prerequisite is a grade of "C" or better in either ~~ECON 1200~~ or both ECON 1010 and ECON 1020 or both ECON 1210 and ECON 1220, or the former ECON 1200.

7.8.2 Economics, Department Code: 018

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
GENERAL MAJOR^{1,2} TOTAL: 30 CREDIT HOURS			
ECON 1200 or Both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, <u>or the former ECON 1200</u> ⁸	<ul style="list-style-type: none">• Two of: ECON 2450², ECON 2460², ECON 2470², ECON 2480²• An additional 18 credit hours in Economics, of which at least 6 hours must be from courses numbered at the 3000 level		
ADVANCED MAJOR¹ TOTAL: 48 CREDIT HOURS			
ECON 1200 or Both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, <u>or the former ECON 1200</u> ⁸	<ul style="list-style-type: none">• ECON 2450^{3,4}, ECON 2460^{3,4}, ECON 2470^{3,4}, ECON 2480^{3,4}, ECON 3170⁴, ECON 3180⁴• ECON 4820⁴ or ECON 4830⁴• An additional 18 credit hours in Economics		
MINOR¹ TOTAL: 18 CREDIT HOURS			
ECON 1200 or Both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, <u>or the former ECON 1200</u> ⁸	An additional 12 credit hours in Economics		
HONOURS SINGLE^{5, 6, 9}			
ECON 1200 or Both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, <u>or the former ECON 1200</u> ⁸	<ul style="list-style-type: none">• 54 credit hours in Economics courses, to include the following:<ul style="list-style-type: none">- ECON 2700, ECON 2800, ECON 3700, ECON 3800, ECON 3810, ECON 4410• One of the following combinations: ECON 3170 and ECON 3180; ECON 4120 and ECON 4130- A further 27 credit hours in Economics, of which: no more than 6 additional hours can be from courses numbered at the 2000 level (other than ECON 2530); and at least 6 additional hours must be from courses numbered at the 4000 level• 6 credit hours from the following Mathematics courses: MATH 1300, MATH 1310, MATH 1500, MATH 1510, MATH 1520, MATH 1690, MATH 1700, MATH 1710• 24 credit hours in ancillary options		
HONOURS DOUBLE^{5, 7, 9}			
ECON 1200 or Both ECON 1010 and ECON 1020, or both ECON 1210 and ECON 1220, <u>or the former ECON 1200</u> ⁸	<ul style="list-style-type: none">• 36 credit hours in Economics courses, to include the following:<ul style="list-style-type: none">- ECON 2700, ECON 2800, ECON 3700• One of the following combinations: ECON 3170 and ECON 3180; ECON 4120 and ECON 4130- A further 21 credit hours in Economics, of which: no more than 6 additional hours can be from courses numbered at the 2000 level (other than ECON 2530); and at least 6 hours must be from courses numbered at the 4000 level• At least 36 credit hours in other Honours field• At least 6 credit hours in ancillary options		

- Revisions to Economics-Mathematics Joint Honours Program

Added material

Deleted material

7.8.4 Economics-Mathematics Joint Honours Program, Program Code: 136E			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
JOINT HONOURS TOTAL: 120 CREDIT HOURS			
<ul style="list-style-type: none"> Both ECON 1010 and 1020, ECON 1200 (or both ECON 1210 and ECON 1220), or the former ECON 1200; MATH 1300¹; MATH 1500^{1,2}; MATH 1700^{1,2}; STAT 1000³; COMP 1010³ Plus 9 credit hours of electives⁴ which should include the required "Written English" course 	<ul style="list-style-type: none"> ECON 2700, ECON 2800, MATH 2202, MATH 2352, MATH 2750, MATH 2800 Plus 6 credit hours of approved electives⁵ 	<ul style="list-style-type: none"> ECON 3700; ECON 3800; ECON 3180¹ (or STAT 2000)¹; MATH 2600⁵; MATH 3230; MATH 3300⁵; MATH 3400; MATH 3700 (or MATH 3710); MATH 3740 (or MATH 3760) Plus 24 credit hours of approved Economics courses¹ Plus 6 credit hours of Mathematics courses at the 3000 or 4000 level, which must include at least one of MATH 3510, MATH 3600, MATH 3810, MATH 3820, or any Mathematics course at the 4000 level 	
30 HOURS	30 HOURS	60 HOURS	
NOTES:			
¹ MATH 1310 may be taken in place of MATH 1300; MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700.			
² The combination of MATH 1500 (or MATH 1510 or MATH 1520) and MATH 1700 may be replaced by MATH 1690.			
³ Some courses may be taken in a different year than indicated; STAT 1000, COMP 1010, MATH 2600 and ECON 3180 (or STAT 2000) may be taken in Year 2. The normal prerequisite for ECON 3180 is ECON 3170, which will be waived for students in this program who have completed Year 1.			
⁴ Of the 24 credit hours in electives in Economics in Years 3 and 4, no more than 6 credit hours may be at the 2000 level or below (with the exception of ECON 2530) and at least 6 credit hours must be at the 4000 level.			
⁵ MATH 3300, plus 3 of the 6 unallocated credit hours in Mathematics in Years 3 and 4, may be replaced by MATH 3350.			
⁶ Students are encouraged to consider useful courses in Computer Science and Statistics as electives.			

- Revisions to Economics-Statistics Joint Honours Program

Added material

Deleted material

7.8.6 Economics-Statistics Joint Honours Program, Program Code 005E			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
JOINT HONOURS TOTAL: 120 CREDIT HOURS			
<ul style="list-style-type: none"> Both ECON 1010 and 1020, ECON 1200 (or both ECON 1210 and ECON 1220), or the former ECON 1200; MATH 1300¹; MATH 1500^{1,2}; MATH 1700^{1,2}; STAT 1000³; COMP 1010³ Plus 9 credit hours of electives which should include the required "Written English" course 	<ul style="list-style-type: none"> ECON 2700, ECON 2800, MATH 2202, MATH 2352, MATH 2750, STAT 2000, STAT 2400 Plus 3 credit hours of approved Economics electives⁴ 	<ul style="list-style-type: none"> ECON 3700, ECON 3800, MATH 3740 or MATH 3760, STAT 3400, STAT 3470, STAT 3480, STAT 3490, STAT 3800 Plus 3 credit hours of approved Economics electives⁴ 	<ul style="list-style-type: none"> ECON 4120, ECON 4130, STAT 4100, STAT 4520, STAT 4530, STAT 4580 Plus 12 credit hours of approved Economics electives⁴
30 HOURS	30 HOURS	30 HOURS	30 HOURS
NOTES:			
¹ MATH 1310 may be taken in place of MATH 1300; MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700.			
² The combination of MATH 1500 ¹ and MATH 1700 ¹ may be replaced by MATH 1690.			
³ Some courses may be taken in a different year than indicated; STAT 1000, COMP 1010, MATH 2600 and ECON 3180 (or STAT 2000) may be taken in Year 2.			
⁴ Of the 18 credit hours of electives in Economics in Years 2, 3 and 4, no more than 6 credit hours may be at the 2000 level or below; ECON 2530 and ECON 3180 are recommended in Year 2 or 3. The normal prerequisite for ECON 3180 is ECON 3170, which will be waived for students in this program who have completed Year 1.			

Department of English, Film, and Theatre

- Revisions to English Program Notes
- Revisions to List of Courses Satisfying Literature Prior to 1900

Added material

Deleted material

English, Film, and Theatre, Department Code: 004

NOTES:

¹ See "(B) Introductory Courses" below for restrictions on the number of courses numbered at the 1000 level that may be taken for credit.

² Students may offer up to 6 credit hours in Film Studies courses, with the exception of FILM 1290 and FILM 1310 (or the former FILM 1300), toward both the 3-year and the 4-year Major in English. Any Film Studies course so applied may not also be offered toward a Minor in Film Studies.

³ Film Studies course FILM 2280 may be used as an English course to satisfy the English course requirements. If it is used as such, it may not also be applied to a Minor in Film Studies or as an ancillary option in Honours.

⁴ Credit in ENGL 2000 may be offered toward the 48 hours in general courses required for a Major (Advanced).

⁵ Students may offer up to 6 credit hours of literature in translation courses (ENGL 2490, CLAS 2612, CLAS 2622, CLAS 3610, CLAS 3620, ICEL 3320, ICEL 3330) to satisfy requirements for a General Major, Advanced Major, Single Honours or Double Honours. Students may offer up to 3 credit hours of literature in translation courses to satisfy the "literature prior to 1900" requirement for a General Major, Advanced Major, Single Honours or Double Honours. Students may not offer literature in translation courses to satisfy the requirements for a Minor.

⁶ Film and Theatre courses, other than Introductory (1000 level), may be used for credit towards an Honours program (Single).

⁷ Certain courses that vary in content from year to year, such as Honours seminars and Special Topics courses, may also satisfy this requirement, as determined by the Department.

⁸ Ancillary options are courses taken from outside the Honours field of study.

Literature Prior to 1900

Students declaring a four-year Advanced Major in English must take at least 15 credit hours from the courses listed below. Students declaring a three-year General Major in English must take at least 9 credit hours from the list. Students declaring a Minor in English must take at least 6 credit hours from the list. Courses chosen from this list will be deemed to satisfy the previous "Special List" requirement for students in progress towards a degree with previously declared Majors or Minors in English. [NOTE: From year to year, other courses may meet this requirement. Please refer to the on-line course timetable for additional information on these courses.]

Course Credit Hours

English

ENGL 2070	Literature of the Sixteenth Century	6
ENGL 2080	Medieval Literature	6
ENGL 2090	Literature of the Seventeenth Century	6
ENGL 2120	Literature of the Restoration and Eighteenth Century	6
ENGL 2130	Literature of the Romantic Period	6
ENGL 2140	Literature of the Victorian Period	6
ENGL 2170	American Literature to 1900	6
ENGL 3000	Chaucer	6
ENGL 3010	Shakespeare	6
ENGL 3020	Milton	6
ENGL 3030	Studies in Sixteenth-Century Literature	3
ENGL 3050	Studies in Old English	6
ENGL 3080	Studies in Medieval Literature	3
ENGL 3090	Studies in Seventeenth-Century Literature	3
ENGL 3120	Studies in Restoration and Eighteenth-Century Literature	3
ENGL 3130	Studies in the Romantics	3

Classics (Classical Studies)

CLAS 2612 Greek Literature in Translation (taught with ENGL 2490) 3

CLAS 3622 Latin Literature in Translation (taught with ENGL 2490) 3

CLAS 3610* Greek Literature in Translation (taught with ENGL 2490) 3

CLAS 3620* Latin Literature in Translation (taught with ENGL 2490) 3

003.269* Greek Literature in Translation 3

003.270* Latin Literature in Translation 3

Icelandic

ICEL 3320 Old Norse Mythology (taught with ENGL 2490) 3

ICEL 3330 Icelandic Sagas in Translation (taught with ENGL 2490) 3

ENGL 3140	Studies in the Victorians	3
ENGL 3180	Studies in Renaissance Literature	3
004.206*	Medieval Literature	3
004.210*	English Literature of the Sixteenth Century	3
004.215*	English Literature of the Seventeenth Century	3
004.226*	English Literature of the Restoration and Eighteenth Century	3
004.228*	Literature of the Romantic Period	3
004.229*	Literature of the Victorian Period	3
004.253*	A History of Critical Theory	3
004.286*	American Literature to 1900	3
004.306*	Studies in Middle English	6
004.307*	Studies in Chaucer	6
004.310*	Studies in Shakespeare	6
004.311*	Studies in Renaissance Literature	6
004.315*	Studies in Seventeenth-Century Literature	6
004.316*	Studies in Milton	6
004.326*	Studies in the Restoration and Eighteenth-Century Literature	6
004.328*	Studies in the Romantics	6
004.329*	Studies in the Victorians	6

NOTE: Restrictions apply to the following courses regarding their use for credit in English (ENGL 2490) and for fulfillment of the literature prior to 1900 requirement. See program note 5. Contact the department for further information on restrictions.

* Indicates course no longer offered.

- Revisions to Film Studies List A

Added material

~~Deleted material~~

List A

Faculty of Arts

Classics

<u>CLAS 2612</u> Greek Literature in Translation	3
<u>CLAS 2622</u> Latin Literature in Translation	3
CLAS 3610* Greek Literature in Translation	3
CLAS 3620* Latin Literature in Translation	3
CLAS 3680 Studies in a Classical Literary Genre 1	3
CLAS 3690 Studies in a Classical Literary Genre 2	3
CLAS 3700 Studies in a Classical Literary Genre 3	3
003.269* Greek Literature in Translation	3
003.270* Latin Literature in Translation	3
English	
ENGL 1200 Representative Literary Works	6
ENGL 1300 Literature since 1900	6
ENGL 2170 American Literature to 1900	6
ENGL 2180 American Literature since 1900	6
ENGL 2270 Canadian Literature	6
ENGL 2960 Drama 1	3
ENGL 3010 Shakespeare	
ENGL 3270 Studies in Canadian Literature	3
ENGL 3500 Creative Writing	6
ENGL 3670 Studies in the Novel	6
ENGL 3790 Advanced Creative Writing	6
ENGL 3960 Drama 2	3
ENGL 3980 Studies in Modernism	3
004.126* Twentieth-Century Literature in English	6
004.285* British Literature of the Twentieth Century	3
004.286* American Literature to 1900	3
004.287* American Literature of the Twentieth Century	3
004.288* Canadian Literature to 1967	3
004.289* Canadian Literature after 1967	3
004.297* Drama 2	3
004.310* Studies in Shakespeare	6
004.388* Studies in Canadian Literature	6
004.391* Studies in Modern Literature	6
French, Spanish and Italian	
FREN 3500 Littérature du 17e siècle (B)	3
FREN 3580 Travail indépendant (A, B)	3
044.240* Le roman du 19e siècle (B)	3
044.241* Littérature du 18e siècle (B)	3
044.242* Le théâtre du 20e siècle (B)	3
044.243* Civilisation française (B)	3
044.351* Roman du 20e siècle (B)	3

044.352* Poésie des 19e et 20e siècles (B)	3
044.353* Littérature canadienne-française (B)	3
German and Slavic Studies (German)	
GRMN 2370* Modern German Literature in Translation	6
008.223* A Survey of German Culture	6
008.459* Nineteenth-Century German Prose	3
008.460* Twentieth-Century German Drama	3
German and Slavic Studies (Polish)	
POL 2320 An Outline of Polish Literature	6
German and Slavic Studies (Ukrainian)	
UKRN 2420 Ukrainian Canadian Literature	3
UKRN 3660 Ukrainian Literature in the West	3
UKRN 3670 Contemporary Ukrainian Literature	3
Judaic Studies	
SEM 2210 Modern Hebrew Literature	6

*Indicates course no longer offered.

Department of French, Spanish and Italian

Deletions:

SPAN 1260 Intermediate Spanish Language Review Cr.Hrs. 3	-3
SPAN 1270 Spanish Oral 1 Cr.Hrs. 3	-3

Introductions:

FREN 2642 Special Topics (B) Cr.Hrs. 3	+3
The content of this course will vary depending on the needs and interests of instructors and students. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written	

consent of department head. As the course content will vary from section to section, students may take this course more than once for credit.

FREN 2770 Littératures francophones d'Afrique et des Antilles (B) Cr.Hrs. 3 +3
Études des principales tendances littéraires de l'Afrique et des Antilles francophones depuis l'époque coloniale jusqu'à nos jours : négritude, engagement anticolonial, post-indépendance et désillusion, créolité, immigration. Lecture d'oeuvres marquantes. Prerequisite: [a grade of "C" or better in FREN 1190 (044.119)] or [a grade of "C+" or better in FREN 1200 (044.120)] or [a grade of "C" or better in FREN 2620 (044.262)] or written consent of department head.

FREN 3842 Special Topics (B) Cr.Hrs. 3 +3
The content of this course will vary depending on the needs and interests of instructors and students. Prerequisite: [a grade of "C" or better in any 2000-level French course]. FREN 2610 (044.261) may not be used as a prerequisite. As the course content will vary from section to section, students may take this course more than once for credit.

SPAN 1262 Intermediate Spanish Grammar and Conversation 1 Cr.Hrs. 3 +3
(Lab required) This course is the first of the intermediate Spanish language sequence. Focus is on developing intermediate skills in reading, writing, speaking and listening. The primary goals are to build communicative competence and enhance social and cultural awareness of the Spanish-speaking world. Not open to students with native oral fluency. Students may not hold credit for SPAN 1262 and any of: SPAN 1261 (former TRAD 1261 or former 122.126) or SPAN 1280 or SPAN 1290 or the former SPAN 1260 (044.126). Prerequisite: [a grade of "C" or better in SPAN 1180 (044.118)](SPAN 1181 or the former TRAD 1181 or the former 122.118) or SPAN 1190 or SPAN 1191] or written consent of instructor or department head.

SPAN 1272 Intermediate Spanish Grammar and Conversation 2 Cr.Hrs. 3 +3
(Lab required) This course is the second of the intermediate Spanish language sequence. Focus is on continued development of intermediate skills in reading, writing, speaking and listening. The primary goals are to further enhance communicative competence and social and cultural awareness of the Spanish-speaking world. Not open to students with native oral fluency. Students may not hold credit for SPAN 1272 and any of: SPAN 1271 or SPAN 1280 or SPAN 1290 or the former SPAN 1270 (044.127) or TRAD 1271 (122.127). Prerequisite: [a grade of "C" or better in SPAN 1262 or the former SPAN 1260 (044.126) or SPAN 1261 (or the former TRAD 1261 or the former 122.126)] or written consent of instructor or department head.

Modifications:

SPAN 1180 Introductory Spanish Cr.Hrs. 6
(formerly 044.118) (Lab required) A course designed for those with little or no previous knowledge of Spanish. The course includes grammar, reading and oral practice, with language laboratory exercises. An oral approach is utilized. The student is given glimpses of cultural aspects of Spain and Spanish America. Students with Senior 4 Spanish may not normally take the course for credit. Not open to students with native oral fluency. Students may not hold credit for SPAN 1180 and any of: SPAN 1181 (former TRAD 1181 or former 122.118) or SPAN 1190 or SPAN 1191. Not open to students who have previously obtained credit in SPAN 1262 or the former SPAN 1260 (044.126) or SPAN 1261 (former TRAD 1261 or former 122.126) or SPAN 1272 or the former SPAN 1270 (044.127) or SPAN 1271 (former TRAD 1271 or former 122.127) or SPAN 1280 or SPAN 1290.

SPAN 1190 Introductory Spanish 2 Cr.Hrs. 3

(Lab required) The second term of SPAN 1180 Introductory Spanish. This course is intended for students who have already knowledge of the alphabet and the sound system, as well as elementary comprehension, communication and writing skills equivalent to those that would be achieved in the first term of SPAN 1180. Students may not hold credit for SPAN 1190 and any of: SPAN 1191 or SPAN 1180 (044.118) or SPAN 1181(former TRAD 1181 or former 122.118). Not open to students who have previously obtained credit in SPAN 1262 or the former SPAN 1260 (044.126) or SPAN 1261 (former TRAD 1261 or former 122.126) or SPAN 1272 or the former SPAN 1270 (044.127) or SPAN 1271 (former TRAD 1271 or former 122.127) or SPAN 1280 or SPAN 1290. Prerequisite: [Senior 4 Spanish] or written consent of instructor or department head.

SPAN 1280 Spanish for Native Speakers Cr.Hrs. 3

A survey of grammar and writing for people with an advanced level of oral Spanish. All the class exercises, readings, activities and examinations will be in Spanish. Students may not hold credit for SPAN 1280 and any of: SPAN 1262 or the former SPAN 1260 (044.126) or SPAN 1261 (former TRAD 1261 or former 122.126) or SPAN 1272 or the former SPAN 1270 (044.127) or SPAN 1271 (former TRAD 1271 or former 122.127) or SPAN 1290. Prerequisite: written consent of instructor or department head.

SPAN 1290 Accelerated Intermediate Spanish Cr.Hrs. 6

(Lab required)This is a one term accelerated course which combines the content of SPAN 1262 and SPAN 1272 (or the former SPAN 1260 (044.126) and the former SPAN 1270 (044.127)). It is a review of grammar and pronunciation structured around extensive writing practice and conversation of contemporary issues relating to the Spanish speaking world. There will be six hours of classroom instruction with a two hour laboratory per week. This course is not open to students with native oral fluency. Students may not hold credit for SPAN 1290 and any of: SPAN 1262 or the former SPAN 1260 (044.126) or SPAN 1261 or SPAN 1272 or the former SPAN 1270 (044.127) or SPAN 1271 or SPAN 1280 or the former TRAD 1261 (122.126) or the former TRAD 1271 (122.127). Prerequisite: [a grade of "C" or better in SPAN 1180 (044.118)(SPAN 1181 or the former TRAD 1181 or the former 122. 118) or SPAN 1190] or written consent of instructor of department head.

SPAN 2200 Spanish American Culture and Civilization Cr.Hrs. 3

(Formerly 044.220) A picture of the geographical, political, economic, social, artistic and cultural forces in Latin America. Essays, cultural readings, newspaper articles, magazines and films are utilized to enhance awareness and to stimulate discussion. Prerequisite: [a grade of "C" or better in one of: SPAN 1262 or SPAN 1261 or SPAN 1272 or SPAN 1271 or SPAN 1280 or SPAN 1290 or the former SPAN 1260 (044.126) or the former TRAD 1261 (122.126) or the former SPAN 1270 (044.127) or the former TRAD 1271 (122.127)] or written consent of department head.

SPAN 2510 Survey of Spanish Civilization Cr.Hrs. 3

(Formerly 044.251) A study of the history of Spanish culture with special stress on its non-literary arts, and selected aspects of Spanish life. Prerequisite: [a grade of "C" or better in one of: SPAN 1262 or SPAN 1261 or SPAN 1272 or SPAN 1271 or SPAN 1280 or SPAN 1290 or the former SPAN 1260 (044.126) or the former TRAD 1261 (122.126) or the former SPAN 1270 (044.127) or the former TRAD 1271 (122.127)] or written consent of department head.

SPAN 2520 Introduction to Spanish Literature Cr.Hrs. 3

(Formerly 044.252) This course will consist of an introduction to Spanish literary characteristics and the study of selected works from the major historical periods and genres. Prerequisite: [a grade of "C" or better in one of: SPAN 1262 or SPAN 1261 or SPAN 1272 or SPAN 1271 or SPAN 1280 or SPAN 1290 or the former SPAN 1260 (044.126) or the former TRAD 1261 (122.126) or the former SPAN 1270 (044.127) or the former TRAD 1271 (122.127)] or written consent of department head.

SPAN 2540 Spanish American Literature 2 Cr.Hrs. 3

(Formerly 044.254) Spanish American Literature from Realism to Post-vanguardism. Realism, the novel of the Mexican revolution, post-modernist to post-vanguardist poetry, the contemporary narrative, are studied through selections from the works of major figures. Prerequisite: [a grade of "C" or better in one of: SPAN 1262 or SPAN 1261 or SPAN 1272 or SPAN 1271 or SPAN 1280 or SPAN 1290 or the former SPAN 1260 (044.126) or the former TRAD 1261 (122.126) or the former SPAN 1270 (044.127) or the former TRAD 1271 (122.127)] or written consent of department head.

SPAN 2550 Advanced Spanish Composition Cr.Hrs. 3

(Formerly 044.255) Designed to enhance the student's ability in writing Spanish. Emphasis on advanced grammatical concepts and clarity of expression. Prerequisite: [a grade of "C" or better in one of: SPAN 1262 or SPAN 1261 or SPAN 1280 or SPAN 1290 or the former SPAN 1260 (044.126) or the former TRAD 1261 (122.126)] or written consent of department head.

SPAN 2560 Advanced Spanish Conversation Cr.Hrs. 3 (Formerly 044.256) Designed to enhance the student's conversational skills. Intensive oral practise as well as written exercises based on contemporary issues. Not open to students with native oral fluency. Prerequisite: [a grade of "C" or better in both SPAN 1262 (the former SPAN 1260 (044.126)) and SPAN 1272 (the former SPAN 1270 (044.127))] or [a grade of "C" or better in both SPAN 1261 (the former TRAD 1261 (122.126)) and SPAN 1271 (the former TRAD 1271 (122.127))] or [a grade of "C" or better in SPAN 1290] or written consent of department head.

SPAN 2580 Contemporary Spanish Female Playwrights Cr.Hrs. 3

This course introduces students to the study of Spanish theater written by contemporary women writers. The course will explore how they use their work and the stage to denounce a contemporary Spanish society that needs to be reexamined. Analysis will underscore how these playwrights treat dis/similar subject matters: search for identity, gender, sexuality, relationships, patriarchal values, feminism, among others. The course will be taught in Spanish. All class readings and examinations are in Spanish. Prerequisite: [a grade of "C" or better in one of: SPAN 1262 or SPAN 1261 or SPAN 1272 or SPAN 1271 or SPAN 1280 or SPAN 1290 or the former SPAN 1260 (044.126) or the former TRAD 1261 (122.126) or the former SPAN 1270 (044.127) or the former TRAD 1271 (122.127)] or written consent of department head.

In response to the introduction of courses at the Collège universitaire de Saint-Boniface, restrictions will be added as follows:

SPAN 3340 Spanish Syntax and Grammar (3) will be modified to restrict against holding for credit with SPAN 3341 Grammaire et syntaxe de l'espagnol (3).

NET CHANGE IN CREDIT HOURS: +9

Program modifications:

- Revisions to the Spanish General Major, Advanced Major and Minor Programs

Added material

~~Deleted material~~

7.10.5 Spanish

For entry, continuation and graduation requirements for the General Degree, Advanced Degree and Honours Degree, see Section 4: Basic Faculty Regulations for the Three Programs Leading to a B.A.

Major Program

For entry to the Major, the prerequisite is a grade of "C" or better in SPAN 1180, or a grade of "C" or better in both SPAN 1190 and ~~SPAN 1262~~SPAN 1260 (or SPAN 1290), or a grade of "C" or better in both SPAN 1280 and 3 credit hours from Spanish courses numbered at the 2000 level. For students who have taken additional courses toward the Major, then a minimum cumulative GPA of 2.00 is required on all courses including the higher grade of repeated courses and excluding failed courses.

A minimum cumulative GPA of 2.00 in all courses that comprise the Major is required to graduate including the higher grade of repeated courses and excluding failed courses.

It is recommended that students who wish to Major in Spanish take the introductory course in the Summer Session prior to entering the fall program, or take ~~SPAN 1262~~SPAN 1260 and ~~SPAN 1272~~SPAN 1270 (or SPAN 1290) in the Summer Session prior to their entry into the second year. This will allow for a wider variety of course selections in the final two years.

Minor Program

For entry to the Minor, the prerequisite is a grade of "C" or better in SPAN 1180, or a grade of "C" or better in both SPAN 1190 and ~~SPAN 1262~~SPAN 1260 (or SPAN 1290), or a grade of "C" or better in both SPAN 1280 and 3 credit hours from Spanish courses numbered at the 2000 level.

Other

Students entering the university with prior knowledge of Spanish may be allowed 'prerequisite standing' in course SPAN 1180 by the Spanish section of the department. Special permission is required to enter a higher numbered course.

All Spanish courses except SPAN 1180 and SPAN 1190 are taught in Spanish.

With written permission of the department head, students registered on the Fort Garry campus may take courses in Spanish language and literature at Collège universitaire de Saint-Boniface.

For information regarding the Minor program in Latin American Studies, see Section 7.18.

7.10.6 Spanish, Program Code: 044S

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
GENERAL MAJOR (OPTION 1)¹ TOTAL: 30 CREDIT HOURS			
SPAN 1180	SPAN 1262 (or the former SPAN 1260) • SPAN 2550 and SPAN 1272 (or the former SPAN 1270), or SPAN 1290, or SPAN 1280² and 3 credit hours from Spanish courses numbered at the 2000 level		
		• 9 credit hours from Spanish courses numbered at the 2000 level	• 6 credit hours from Spanish courses numbered at the 3000 level
GENERAL MAJOR (OPTION 2)¹ TOTAL: 30 CREDIT HOURS			
SPAN 1190	• SPAN 1262 (or the former SPAN 1260) and SPAN 1272 (or the former SPAN 1270), or SPAN 1290, or SPAN 1280² and 3 credit hours from Spanish courses numbered at the 2000 level • SPAN 2550 • 6 credit hours from Spanish courses numbered at the 2000 level		
		12 credit hours from Spanish courses numbered at the 3000 level	

GENERAL MAJOR (OPTION 3)² TOTAL: 30 CREDIT HOURS			
SPAN 1280 and 3 credit hours from Spanish courses numbered at the 2000 level	• SPAN 2550 • 9 credit hours from Spanish courses numbered at the 2000 level	12 credit hours from Spanish courses numbered at the 3000 level	
ADVANCED MAJOR (OPTION 1)¹ TOTAL: 48 CREDIT HOURS			
SPAN 1180	<u>SPAN 1262 (or the former SPAN 1260) and SPAN 1272 (or the former SPAN 1270), or SPAN 1290, or SPAN 1280³ and 3 credit hours from Spanish courses numbered at the 2000 level</u>	• SPAN 2550 • 12 credit hours from Spanish courses numbered at the 2000 level • 6 credit hours from Spanish courses numbered at the 3000 level	15 credit hours from Spanish courses numbered at the 3000 level
ADVANCED MAJOR (OPTION 2)¹ TOTAL: 48 CREDIT HOURS			
SPAN 1190	• SPAN 1262 (or the former SPAN 1260) and SPAN 1272 (or the former SPAN 1270), or SPAN 1290, or SPAN 1280 ³ and 3 credit hours from Spanish courses numbered at the 2000 level • SPAN 2550 • 6 credit hours from Spanish courses numbered at the 2000 level	• 6 credit hours from Spanish courses numbered at the 2000 level • 9 credit hours from Spanish courses numbered at the 3000 level	15 credit hours from Spanish courses numbered at the 3000 level
ADVANCED MAJOR (OPTION 3)² TOTAL: 48 CREDIT HOURS			
SPAN 1280 and 3 credit hours from Spanish courses numbered at the 2000 level	• SPAN 2550 • 9 credit hours from Spanish courses numbered at the 2000 level	• 6 credit hours from Spanish courses numbered at the 2000 level • 9 credit hours from Spanish courses numbered at the 3000 level	15 credit hours from Spanish courses numbered at the 3000 level
MINOR (OPTION 1)¹ TOTAL: 18 CREDIT HOURS			
SPAN 1180	<u>SPAN 1262 (or the former SPAN 1260) and SPAN 1272 (or the former SPAN 1270), or SPAN 1290, or SPAN 1280³ and 3 credit hours from Spanish courses numbered at the 2000 level</u>	• 3 credit hours from Spanish courses numbered at the 2000 level • SPAN 2550	
MINOR (OPTION 2)¹ TOTAL: 18 CREDIT HOURS			
SPAN 1190	• SPAN 1262 (or the former SPAN 1260) and SPAN 1272 (or the former SPAN 1270), or SPAN 1290, or SPAN 1280 ³ and 3 credit hours from Spanish courses numbered at the 2000 level • SPAN 2550	6 credit hours from Spanish courses numbered at the 3000 level	
MINOR (OPTION 3)² TOTAL: 18 CREDIT HOURS			
SPAN 1280 and 3 credit hours from Spanish courses numbered at the 2000 level	• 3 credit hours from Spanish courses numbered at the 2000 level • SPAN 2550	6 credit hours from Spanish courses numbered at the 3000 level	
NOTES:			
¹ Options 1 and 2 are not open to students with native oral fluency in Spanish. Students with native oral fluency in Spanish are advised to follow Option 3.			
² Option 3 is open to students with native oral fluency in Spanish. Such students may enter Spanish courses numbered at the 2000 level with a grade of "C" or better in SPAN 1280.			
³ With written consent of the department head students may be allowed to substitute both SPAN 1262 and SPAN 1272 (or SPAN 1290) with both SPAN 1280 (3) and an additional 3 credit hours of 2000 level Spanish courses.			

Modification to Italian Studies List A.

Addition of CLAS 2622 Latin Literature in Translation (3)

Mark as no longer offered CLAS 3620 Latin Literature in Translation (3)

Department of German and Slavic Studies

Deletions:

RUSN 2350 Russian Women's Writing from the 1950s to the Present Day Cr.Hrs. 3	-3
RUSN 2750 Contemporary Russian Literature and Film Cr.Hrs. 3	-3

Introductions:

RUSN 2310 Exploring Russia through Film Cr.Hrs. 3

+3

A survey of Russian cinema from its origins to the present. The course focuses on the role of film in Russian culture, ideological uses of film, and cinema as a medium of cultural dissent and witness to social change. Lectures in English; all films in Russian with English subtitles; no prior knowledge of Russian language or culture is required.

RUSN 2410 Russian Literature after Stalin Cr.Hrs. 3

+3

A survey of Russian literature from the period of High Stalinism to the present. The course examines effects of ideological and political change on literary production. Lectures in English. Readings in English or in the original.

NET CHANGE IN CREDIT HOURS: 0

Modifications to the Russian Program Notes.

7.11.6 Russian, Program Code: 052R

NOTES:

With written consent from the department head, courses offered by other departments may be approved for credit.

The following courses count as language courses: RUSN 1300, RUSN 1330, RUSN 2630, RUSN 2810, RUSN 2820, RUSN 3200, RUSN 3210, RUSN 3220.

The following courses count as culture and literature courses: RUSN 1400, RUSN 2280, RUSN 2290, ~~RUSN 2350~~, RUSN 2310, RUSN 2410, RUSN 2740, ~~RUSN 2750~~, RUSN 2760, RUSN 3330, RUSN 3580, RUSN 3770, RUSN 3780, RUSN 3790, RUSN 3900, RUSN 3980, SLAV 2240, SLAV 2250, SLAV 2260, SLAV 2270, SLAV 3520, SLAV 3920.

Global Political Economy Program

The program is proposing program modifications and changes to the list of suggested electives.

- Revisions to General Major and Advanced Major Programs
- Revision to List of Suggested Electives

Added material

Deleted material

7.12.1 Program Information

For entry to the Major, the prerequisite is a grade of "C" or better in any 12 credit hours from the following: ECON 1010 and ECON 1020, ECON 1200 (or ECON 1210 and ECON 1220) or the former ECON 1200; SOC 1200; (no more than 6 credit hours from) POLS 1000, POLS 1010, POLS 1040, POLS 1070, POLS 1500; (no more than 6 credit hours from) HIST 1370, HIST 1380, HIST 1500, HIST 2380, HIST 2720.

7.12.2 Global Political Economy, Program Code: 157

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
GENERAL MAJOR TOTAL: 60 CREDIT HOURS			
<ul style="list-style-type: none"> • Anthropology: ANTH 2390; ANTH 3320 or Sociology SOC 3810 • Economics: <u>ECON 1010 and ECON 1020, ECON 1200</u> or ECON 1210 and ECON 1220; ECON 2540; ECON 2550; ECON 2630 or ECON 3390 • History: 12 credit hours from: HIST 1370, HIST 1380, HIST 1500, HIST 2380, HIST 2720 • Political Studies: 6 credit hours from: POLS 1000, POLS 1010, POLS 1040, POLS 1070, POLS 1500; POLS 2040 • Sociology: SOC 1200; SOC 3380 or SOC 3838 or SOC 3840 or <u>SOC 3890</u> <u>SOC 3870</u> or Anthropology ANTH 2500; SOC 3810 or Anthropology ANTH 3320 			
ADVANCED MAJOR TOTAL: 78 CREDIT HOURS			
<ul style="list-style-type: none"> • Anthropology: ANTH 2390; ANTH 3320 or Sociology SOC 3810; ANTH 3750 • Economics: <u>ECON 1010 and ECON 1020, ECON 1200</u> or ECON 1210 and ECON 1220; ECON 2540; ECON 2550; ECON 2630 or ECON 3390 • Global Political Economy: GPE 2700; GPE 4700 • History: 12 credit hours from: HIST 1370, HIST 1380, HIST 1500, HIST 2380, HIST 2720 • Political Studies: 6 credit hours from: POLS 1000, POLS 1010, POLS 1040, POLS 1070, POLS 1500; POLS 3220; POLS 3250 or POLS 3840 • Sociology: SOC 1200; SOC 2290; SOC 3380 or SOC 3838 or SOC 3840 or <u>SOC 3890</u> <u>SOC 3870</u> or Anthropology ANTH 2500; SOC 3810 or Anthropology ANTH 3320 			

List of Courses for Global Political Economy

See the departmental Calendar section for full course descriptions.

Anthropology		ECON 3390	Development Economics	6
ANTH 2390 Social Organization in Cross-Cultural Perspective (B)		Global Political Economy		
<u>ANTH 2500 Culture, Environment, and Technology (B)</u>		GPE 2700	Perspectives on Global Political Economy	3
ANTH 3320 Women in Cross-Cultural Perspective (B)		GPE 4700	Studies in Global Political Economy	6
ANTH 3750 Globalization and the World-System (B)		History		
Economics		HIST 1370	An Introduction to Modern World History: 1500-1800 (M)	3
<u>ECON 1010 Introduction to Microeconomic Principles</u>		HIST 1380	An Introduction to Modern World History: 1800 - Present (M)	3
<u>ECON 1020 Introduction to Macroeconomic Principles</u>		HIST 1500	An Introduction to Modern World History: 1500 - Present (M)	6
ECON 1200* Principles of Economics		HIST 2380	The Twentieth-Century World (G,M)	6
ECON 1210 Introduction to Canadian Economic Issues and Policies		HIST 2720	The World Since 1945 (G,M)	6
ECON 1220 Introduction to Global and Environmental Economic Issues and Policies		Political Studies		
ECON 2540 Political Economy 1: Production and Distribution		POLS 1000	Democracy and Development	3
ECON 2550 Political Economy 2: Economic Growth and Fluctuations in a Global Economic Environment		POLS 1010	Political Ideas and Ideologies	3
ECON 2630 An Introduction to the World's Economies		POLS 1040	Global Political Issues	3
		POLS 1070	Law, Politics, and Power in Canada	3
		POLS 1500	Introduction to Politics	6

POLS 2040	Introduction to International Relations	6	HIST 4010	Imperialism, Decolonization and Neo-Colonialism, 1700 to the Present (G,M)	6
POLS 2530*	Elements of Foreign Policy	6	HIST 4320	Studies in World History since 1945 (G,M)	3
POLS 3220	Globalization and the World Economy	3	011.341*	The British Empire and Commonwealth Since 1815 (G)	6
POLS 3250	International Political Economy	3	Labour Studies		
019.383*	The Politics of International Economic Relations	6	LABR 1260	Working for a Living	3
Sociology			LABR 1270*	Introduction to the Political Economy of Labour	3
SOC 1200	Introduction to Sociology	6	LABR 1290	Introduction to the Canadian Labour Movement	3
SOC 2290	Introduction to Research Methods	6	LABR 2100	Political Economy of Labour	3
SOC 3380	Power, Politics and the Welfare State	3	LABR 2300	Workers, Employers and the State	3
SOC 3470*	Political Sociology	3	LABR 2420	Economics of the Labour Process and Labour Relations (Cross-listed with Economics ECON 2420)	6
SOC 3690*	Sociology of the Developing Societies	3	LABR 3090	Globalization and Labour	3
SOC 3810	Sociological Perspectives on Gender and Sexuality	3	Political Studies		
SOC 3838	Ecology and Society	3	POLS 2040	Introduction to International Relations	6
SOC 3840	Community and Social Reconstruction	3	POLS 2070	Introduction to Canadian Government	6
SOC 3870*	Social Inequality	3	POLS 2530	Elements of Foreign Policy	6
SOC 3890	Power and Inequality in Comparative Perspective	3	POLS 3200	International Security and Conflict Management	6
List of Suggested Electives			POLS 3330	Politics of the European Union	3
Faculty of Arts			POLS 3810	Introduction to Marxism	3
Anthropology			POLS 3880	Comparative Foreign Policy	3
ANTH 1220	Cultural Anthropology (A)	3	POLS 4530	Regionalism in International Politics	3
ANTH 1520	Critical Cultural Anthropology (A)	3	POLS 4660	The State in the Economy	6
ANTH 2460*	Peasantry in a Changing World (B)	3	019.156*	Introduction to Canadian Government	6
ANTH 2500	Culture, Environment, and Technology (B)	3	019.273*	International Conflict Resolution	6
ANTH 2510	Anthropology of Economic Systems (B)	3	Sociology		
ANTH 2530	Anthropology of Political Systems (B)	3	SOC 2480	Population Problems	3
ANTH 2570	Urban Anthropology (B)	3	SOC 3380	Power, Politics and the Welfare State	3
ANTH 3320	Women in Cross-Cultural Perspective (B)	3	SOC 3470*	Political Sociology	3
ANTH 3380	Anthropology and Contemporary Social Issues (B)	3	SOC 3690*	Sociology of the Developing Societies	3
076.244*	Peasant Society and Culture (B)	3	SOC 3810	Sociological Perspectives on Gender and Sexuality	3
Asian Studies			SOC 3838	Ecology and Society	3
ASIA 1420	Asian Civilizations to 1500 (Cross-listed with History HIST 1420)	3	SOC 3840	Community and Social Reconstruction	3
ASIA 1430	Asian Civilizations Since 1500 (Cross-listed with History HIST 1430)	3	SOC 3870*	Social Inequality	3
ASIA 2070*	South Asian Civilization	6	SOC 3890	Power and Inequality in Comparative Perspective	3
ASIA 2080	South Asian Civilization	3	Clayton H. Riddell Faculty of Environment, Earth, and Resources		
150.211*	East Asian Civilization	6	Geography		
Economics			GEOG 1280	Introductory Human Geography	3
ECON 2420	Economics of the Labour Process and Labour Relations (Cross-listed with Labour Studies LABR 2420)	3	GEOG 2210	Economic Geography	6
ECON 2490	Economic Accounting	3	GEOG 3590	Geography of Developing Countries	6
ECON 2560	Corporations in the Global Economy	3	GEOG 3800	Geography of Transportation Development	3
ECON 2630	An Introduction to the World's Economies	6	GEOG 4640	Models in Urban Geography	3
ECON 3390	Development Economics	6	*indicates course no longer offered.		
ECON 3660	Economic Ideas and Social Institutions	6			
ECON 3710	Sustainable Development: Issues and Policy	3			
ECON 4510*	Economy and State in a Modern Period: Western Europe and North America	6			
History					
HIST 2670	History of Capitalism (M)	3			
HIST 2680	History of Socialism from the French Revolution to the Present (M)	3			
HIST 2710	Women in History (G)	6			
HIST 3580	Topics in Recent World History 1 (M)	3			
HIST 3590	Topics in Recent World History 2 (M)	3			

Labour Studies Program

Introduction:

LABR 3050 Issues in Occupational Health and Safety and Workers' Compensation Cr.Hrs.3

+3

This course will explore historical, legal and political issues surrounding health and safety in Canadian workplaces with an emphasis on Manitoba. It will critically examine both the Workers' Compensation and the Workplace Health and Safety systems as they currently exist and review the role of workers, employers, unions and government in these processes. It will investigate

various challenges and emerging issues in health and safety including but not limited to industrial disease, gender concerns, precarious employment and globalization. Prerequisite: [a grade of “C” or better in three credit hours of 1000 level Labour Studies] or [a grade of “C” or better in both HRIR 3450 (027.345) and an additional 6 credit hours of HRIR courses] or written consent of the Labour Studies coordinator.

NET CHANGE IN CREDIT HOURS: +3

Modifications to the list of electives:

Addition of:

SOC 3890 Power and Inequality in Comparative Perspective (3)

GMGT 2060 Management and Organizational Theory (3)

GMGT 4210 Seminar in Management and Capitalism (3)

Marked as no longer offered:

SOC 3870 Social Inequality (3)

GMGT 2080 Introduction to Management and Organizational Theory (3)

Native Studies Program

Introductions:

NATV 2110 Introduction to Aboriginal Community Development Cr.Hrs. 3 +3

Community development is the main strategy available for achieving the level of governance that most Aboriginal communities seek. It involves a plan that captures the spirit of a community and stirs the imagination of the members. Obstacles include lack of time, resources, vision and understanding of what a community plan for development can accomplish. This course will examine community development within an Aboriginal context. Students may not hold credit for both NATV 2110 and NATV 2000 (032.200) when titled “Introduction to Aboriginal Community Development”. Prerequisite: [a grade of “C” or better in NATV 1200 (032.120)] or [a grade of “C” or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head.

NATV 3160 Fundraising for Aboriginal Organizations (3)

This course examines effective fundraising skills as critical for the longevity of many programs in the Aboriginal community. While government funding is an important source, understanding grantsmanship and other funding strategies are critical for sustained program existence and effective use of scarce human and financial resources. Students may not hold credit for both NATV 3160 and NATV 3000 (032.300) when titled “Financing Strategies for Aboriginal Non-Profit Initiatives”. Prerequisite: [a grade of “C” or better in NATV 1200 (032.120)] or [a grade of “C” or better in both NATV 1220 (032.122) and NATV 1240 (032.124)] or written consent of department head.

NET CHANGE IN CREDIT HOURS: +6

Program modifications:

- Revisions to the Native Studies Advanced Major Aboriginal Governance Stream

Added material

~~Deleted material~~

7.21.3 Native Studies Aboriginal Governance Stream, Program Code: 032G

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
NATIVE STUDIES ADVANCED MAJOR ABORIGINAL GOVERNANCE STREAM WITH REQUIRED MINOR IN BUSINESS			
NATV 1200 or NATV 1220 and NATV 1240	• NATV 2220, NATV 3120, NATV 3310, NATV 3350, NATV 4200, NATV 4320		
	<ul style="list-style-type: none">• 3 credit hours in courses offered by Native Studies numbered at the 3000 level• 3 credit hours in courses offered by Native Studies numbered at the 4000 level• 15 credit hours in courses offered by Native Studies¹• Additional courses required for purposes of completing the governance stream are		
	Faculty of Arts		
	Economics – <u>ECON 1010 and ECON 1020-EGON-1200</u>		
	Political Studies - POLS 1500 and POLS 2070 <u>and</u> POLS 4150		
	Faculty of Science		
	Computer Science - COMP 1260		
	Statistics - STAT 1000		
REQUIRED MINOR IN BUSINESS FOR THOSE STUDENTS IN A DECLARED ABORIGINAL GOVERNANCE STREAM			
ACC 1100, ACC 1110, FIN 2200, GMGT 2030, GMGT 3300, HRIR 2440, MIS 2000, MKT 2210	6 credit hours from: ENTR 3100, FIN 3470, GMGT 2000, HRIR 4410		
NOTE:			
¹ Students may substitute up to six credit hours from the list of approved courses and/or six hours of Native Language courses in lieu of Native Studies courses.			

Department of Philosophy

Modification:

PHIL 2820 Existentialism Cr.Hrs. 3

(formerly 015.282) A study of existential themes as they appear in the writings, both literary and philosophical, of such figures as Beckett, Camus, de Beauvoir, Heidegger, Kafka, Jaspers, Kierkegaard, Marcel, Nietzsche, Sartre, Buber and Laing. Students may not hold credit for PHIL 2820 (015.282) and any of: PHIL 2821 (015.282) or PHIL 2710 (015.271) or PHIL 2720 (015.272).

In response to the introduction of courses at the Collège universitaire de Saint-Boniface, restrictions will be added as follows:

PHIL 2740 Ethics and Biomedicine (3) and PHIL 2290 Ethics and Society (6) will be modified to restrict against holding for credit with PHIL 2741 Éthique et biomédecine (3).

PHIL 2750 Ethics and the Environment (3) will be modified to restrict against holding for credit with PHIL 2751 Éthique et environnement (3).

PHIL 2830 Business Ethics (3) will be modified to restrict against holding for credit with PHIL 2831 Éthique des affaires (3).

PHIL 2840 The Ethics of War and Peace (3) will be modified to restrict against holding for credit with PHIL 2841 Éthique de la guerre et de la paix (3).

PHIL 2860 Philosophy of Law (3) will be modified to restrict against holding for credit with PHIL 2861 Philosophie du droit (3).

PHIL 2870 Philosophy and Law (3) will be modified to restrict against holding for credit with PHIL 2871 La philosophie et le droit (3).

NET CHANGE IN CREDIT HOURS: 0

Department of Sociology

Deletion:

SOC 3870 Social Inequality Cr.Hrs. 3 -3

Introductions:

SOC 2450 Sociology of the Body Cr.Hrs. 3 +3

Despite its centrality in social life, the human body is too often taken for granted. This course explores a variety of sociological perspectives on the socially constructed nature of bodies to understand how society and social relations both shape and are shaped by the human body.

Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122)].

SOC 3890 Power and Inequality in Comparative Perspective Cr.Hrs. 3 +3

Engaging in a cross-temporal and cross-national investigation, this course critically surveys classical and contemporary debates around the inevitability of social inequality, and explores the ways that inequalities have been reproduced and rationalized, or attenuated and challenged, throughout human history. Key facets and indicators of inequality (such as poverty, homelessness, social exclusion and the distribution of income and wealth) and their relation to central axes of social inequality (class, gender, race/ethnicity and age) are considered. Put simply, this course is concerned with 'who gets what and why?' Students may not hold credit for SOC 3890 and any of: SOC 3871 (077.387) or the former SOC 3870 (077.387). Prerequisite: [a grade of "C" or better in SOC 1200 (077.120) or the former SOC 1201 (077.120)] or [a grade of "C" or better in both SOC 1211 (077.121) and SOC 1221 (077.122).]

NET CHANGE IN CREDIT HOURS: +3

Program modification:

- Revisions to the Sociology Advanced Major Program

Added material

~~Deleted material~~

8.26.3 Sociology, Department Code: 077			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
ADVANCED MAJOR SOCIOLOGY (NOT CURRENTLY OFFERED) TOTAL: 48 CREDIT HOURS			
SOC 1200 or SOC 1211 and SOC 1221		• SOC 2220, SOC 2290, SOC 2330 • one of SOC 2390, SOC 3370, SOC 3810, SOC 3890 SOC 3870 • one of SOC 3310, SOC 3330, SOC 3350, SOC 3360, SOC 3380, SOC 3390 • 6 credit hours in Sociology courses numbered at the 2000 or 3000 level	
		18 credit hours in Sociology courses numbered at the 2000 or 3000 level	

Ukrainian Canadian Heritage Studies Program

Modification to the List A:

Marked as no longer offered: ECON 1200 Principles of Economics (6).

Women and Gender's Studies Program

Modification to the List A:

Marked as no longer offered: RUSN 2350 Russian Women's Writing from the 1950s to the Present Day (3).

Faculty of Dentistry – School of Dental Hygiene

Deletions:

HYGN 4480 Professional Practice Management and Leadership Cr.Hrs. 2	-2
HYGN 4450 Community Health Practicum Cr.Hrs. 2	-2

Introductions:

HYGN 4410 Dental Hygiene Practice Management and Leadership Cr.Hrs. 3	+3
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This course is designed to provide the student with the necessary knowledge and skills to facilitate the transition to the practice environment. The focus of the course is leadership, workplace dynamics, management, developing alternate practice settings and working with third party payers. Oral health care management in a variety of organizations such as community health agencies, private practice, research and industry will all be discussed.

HYGN 4460 Community Health Independent Study Cr.Hrs. 3	+3
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This course is a practicum and/or independent study course focusing on the design and/or implementation and evaluation of the health promotion program process in the field. Students may choose to host an oral health awareness raising event for the public, provide community-based oral health promotion activity at a selected site, develop a small-scale oral health promotion program for an underserved population group or a similar community-based project.

NET CHANGE IN CREDIT HOURS: +2

Program modifications:

Degree Completion Curriculum

Prerequisite courses Mandatory (6 Cr.Hrs.) STAT 1000 Basic Statistical Analysis (3) REHB 2450 Research Methods (or equivalent)(3) Dental Hygiene Core (Minimum 12 Cr.Hrs.) Mandatory Courses (2 Cr.Hrs.) HYGN 2380 Pain Management (2) Elective Courses HYGN 4520 Advanced Independent Study (3) HYGN 4550 Advanced Independent Study II (3) HYGN 4530 Teaching Practicum (3) HYGN 4540 Advanced Teaching Practicum (3) HYGN 4450 Community Health Practicum (2) HYGN 4480 Professional Practice Management & Leadership (2) HYGN 4410 Dental Hygiene Practice Management and Leadership(3) HYGN 4460 Community Health Independent(3)	Potential Electives – Not part of the Core Program (up to 21 Cr.Hrs.) HYGN 4500 Advanced Oral Pathology (UBC)(3) HYGN 4510 Microbiology & Immunology (3) HYGN 4470 Assessment & Treatment Planning for Advanced Periodontal Disease (3) NURS 1260 Human Growth & Development (3) PHIL 1290 Critical Thinking (3) SOC 2490 Sociology of Health & Illness (3) SOC 3540 Sociology of Health Care Systems (3) HNSC 1210 Nutrition for Health & Changing Lifestyles (3) PHIL 2740 Ethics & Biomedicine (3) XXX.3XX Other free choice Electives (3-9)
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Faculty of Education

Introduction:

EDUB 5012 Video Art, Culture, and Education Cr.Hrs. 3

+3

This course will focus on fostering students pedagogical, historical, theoretical, and sociological knowledge, as well as creative video skills. Students will learn about developing and implementing video across the curricula from grade 1 to grade 12 in order to incorporate video making and current viewing practices into classrooms. May not be held for credit with EDUB 1840 or EDUB 5220 where the title is 'Video Art, Culture, and Education'.

NET CHANGE IN CREDIT HOURS: +3

Faculty of Engineering

Preliminary Engineering Program

Preliminary Engineering Program

The Preliminary Engineering Program is common to all programs in engineering. Students in the preliminary engineering program or University 1 must complete at least 8 courses to be admitted to a degree granting engineering program. A student must complete the following list of 12 courses in order to graduate with a BSc degree from any of the engineering programs.

CHEM 1300	Structure and Modelling in Chemistry (3)
COMP 1010	Introductory Computer Science (3)
COMP 1012	Computer Programming for Scientists and Engineers (3)
ENG 1430	Design in Engineering (3)
ENG 1440	Introduction to Statics (3)
ENG 1450	Introduction to Electrical and Computer Engineering (3)
ENG 1460	Introduction to Thermal Sciences (3)
ENG 1310	Literary Topics 1 (3)
MATH 1210	Techniques of Classical and Linear Algebra (3)
MATH 1510	Applied Calculus 1 or equivalent (3)(Note 1)
MATH 1710	Applied Calculus 2 or equivalent (3)(Note 2)
PHIL 1290	Critical Thinking 1 (3)
PHYS 1050	Physics 1: Mechanics (3)

TOTAL: 36 credit hours

Note:

- (1) MATH 1500 and MATH 1510 are regarded as equivalent to each other.
- (2) MATH 1700 and MATH 1710 are regarded as equivalent to each other.
- (3) MATH 1690 may be regarded to being equivalent to one course for (1) and one courses from (2).
- (4) MATH 1300 is not an acceptable equivalent to MATH 1210.

Department of Biosystems Engineering

Deletion:

BIOE 4400 Unit Operations 2 Cr.Hrs. 4

-4

Modifications:

BIOE 4240 Graduation Project Cr.Hrs. 3

(formerly 034.424) Either an independent or a directed study including at least one of: a comprehensive literature review, an experimental research project, or an engineering design problem. The project is to be concluded by a formal report or thesis. Prerequisites: BIOE 3270 (034.327) or approval of department.

BIOE 4390 Unit Operations 1 Cr.Hrs. 4

(formerly 034.439) Equipment and systems used in handling, mixing, size reduction, separation and size enlargement of value-added food products. Prerequisites: CIVL 2790 (or 023.279) or MECH 2262 (or 025.226). Corequisites: BIOE 3320 (or 034.332 or 034.323), BIOE 3270 (or 034.327).

BIOE 4700 Alternative Building Design Cr.Hrs. 4

This course will provide students with experience in the design of structures that utilize natural and green building materials and techniques. Students will get hands-on experience with

various natural building materials such as straw, straw light clay, cob and stackwall.
Prerequisites: BIOE 3590 (or 034.359) or CIVL 3770 (or 023.377).

NET CHANGE IN CREDIT HOURS: -4

Program modifications:

Table 1. Comparison of current Biosystems Engineering Program (left) with the revised Biosystems Engineering program (right).

Current Biosystems Engineering Program	Revised Biosystems Engineering Program
BIOE 2110 Transport Phenomenon	BIOE 2110 Transport Phenomenon
BIOE 2580 Biosystems Engineering Design Trilogy 1	BIOE 2580 Biosystems Engineering Design Trilogy 1
BIOE 2590 Biology for Engineers	BIOE 2590 Biology for Engineers
BIOE 3270 Instrumentation and Measurement for Biosystems	BIOE 3270 Instrumentation and Measurement for Biosystems
BIOE 3320 Engineering Properties of Biological Materials	BIOE 3320 Engineering Properties of Biological Materials
BIOE 3580 Biosystems Engineering Design Trilogy 2	BIOE 3580 Biosystems Engineering Design Trilogy 2
BIOE 3590 Mechanics of Materials in Biosystems	BIOE 3590 Mechanics of Materials in Biosystems
BIOE 4240 Graduation Project	BIOE 4240 Graduation Project
BIOE 4390 Unit Operations¹	BIOE 4530 Analysis and Design of Biomachinery
BIOE 4580 Biosystems Engineering Design Trilogy 3	BIOE 4580 Biosystems Engineering Design Trilogy 3
CHEM 1310 University Chemistry 1	CHEM 1310 University Chemistry 1
CIVL 2790 Fluid Mechanics OR MECH 2262 Fundamentals of Fluid Mechanics	CIVL 2790 Fluid Mechanics OR MECH 2262 Fundamentals of Fluid Mechanics
CIVL 2800 Solid Mechanics 1 OR MECH 2222 Mechanics of Materials	CIVL 2800 Solid Mechanics 1 OR MECH 2222 Mechanics of Materials
CIVL 3710 Finite Element Analysis	CIVL 3710 Finite Element Analysis
CIVL 4050 Engineering Economics	CIVL 4050 Engineering Economics
ENG 2020 Engineering CAD Technologies for Biosystems	ENG 2020 Engineering CAD Technologies for Biosystems
MATH 2120 Introduction to Numerical Methods for Engineers	MATH 2120 Introduction to Numerical Methods for Engineers
MATH 2130 Engineering Mathematical Analysis 1	MATH 2130 Engineering Mathematical Analysis 1
MATH 2132 Engineering Mathematical Analysis 2	MATH 2132 Engineering Mathematical Analysis 2
MBIO 2100 General Microbiology A OR MBIO 1220 Essentials of Microbiology	MBIO 2100 General Microbiology A OR MBIO 1220 Essentials of Microbiology
MECH 3482 Kinematics and Dynamics	MECH 3482 Kinematics and Dynamics
STAT 2220 Contemporary Statistics for Engineers	STAT 2220 Contemporary Statistics for Engineers
SOIL 4060 Physical Properties of Soil OR BIOL 1410 Anatomy of the Human Body	SOIL 4060 Physical Properties of Soil OR BIOL 1410 Anatomy of the Human Body
AGRI 2200 Principles of Plant and Animal Physiology OR BIOL 1412 Physiology of the Human Body	AGRI 2200 Principles of Plant and Animal Physiology OR BIOL 1412 Physiology of the Human Body
One Course in Technology in Society (ANTH 2430, ANTH 2500 or CIVL 4460)	One Course in Technology in Society (ANTH 2430, ANTH 2500 or CIVL 4460)
Design Elective ¹	Design Elective ¹
Design Elective ¹	Design Elective ¹
Design Elective ¹	Design Elective ¹
Design Elective ¹	Design Elective ¹
Complementary Studies Elective	Complementary Studies Elective
Complementary Studies Elective	Complementary Studies Elective
Free Elective	Free Elective
Free Elective	Free Elective

¹ Choose from list of Biosystems Engineering Design Electives

Minor in Agribusiness:

A minor in Agribusiness is available to Biosystems Engineering students. The minimum requirement is 18 credit hours consisting of ECON 1010 and ECON 1020 (or ECON 1200 Principles of Economics)(6 credit hours), ABIZ 1000 Introduction to Agribusiness (3 credit hours), ABIZ 2510 Introduction to Agricultural and Food Marketing (3 credit hours), ABIZ 2520 Introduction to Management Sciences (3 credit hours) and at least three additional credit hours from the Department of Agribusiness and Agricultural Economics (students must meet all prerequisite requirements). Courses used for the minor may also be used to fulfill course requirements in Biosystems Engineering.

Introduction of four concentrations:

Agricultural Specialization

Students who obtain a grade of "C" or better in the courses listed below will receive a notation of "agricultural specialization" on their transcript at the time of graduation.

Group A: Science Electives

Within the two science slots in the core program, choose:

- SOIL 4060 Physical Properties of Soil
- AGRI 2200 Principles of Plant and Animal Physiology

Group B: Biosystems Engineering Design Electives

Choose at least three of the following courses from the list of available design electives:

- BIOE 4412 Design of Light-Frame Building Systems
- BIOE 4420 Crop Preservation
- BIOE 4590 Management of By-Products from Animal Production
- BIOE 4600 Design of Water Management Systems

Group C: Complementary Studies & Free Electives

Choose 9 credit hours (minimum of 3 credit hours of complementary studies) from the following list of courses:

- ABIZ 1000 Introduction to Agribusiness Management*
- ABIZ 3530 Farm Management*
- AGRI 1500 Natural Resources and Primary Agricultural Production
- AGRI 1510 Production, Distribution and Utilization of Agricultural Products
- BIOE 2090 Machinery for Agricultural Production
- BIOE 2222 Precision Agriculture Concepts and Applications
- ENTM 3170 Crop Protection Entomology
- PLNT 2500 Crop Production
- PLNT 2510 Fundamentals of Horticulture
- SOIL 3520 Pesticides: Environment, Economics and Ethics

Bioprocessing Specialization

Students who obtain a grade of "C" or better in the courses listed below will receive a notation of "bioprocessing specialization" on their transcript at the time of graduation.

Group A: Science Electives

Within the two science slots in the core program, choose:

- SOIL 4060 Physical Properties of Soil
- AGRI 2200 Principles of Plant and Animal Physiology

Group B: Biosystems Engineering Design Electives

Choose at least three courses from the list of available design electives:

- BIOE 4420 Crop Preservation
- BIOE 4390 Unit Operations 1
- BIOE 4440 Bioprocessing for Biorefining
- BIOE 4590 Management of By-Products from Animal Production
- BIOE 4630 Pollution Prevention Practices

Group C: Complementary Studies & Free Electives

Choose 9 credit hours (minimum of 3 credit hours of complementary studies) from the following list of courses:

- ABIZ 1010 Economics of World Food Issues and Policies*
- ENG 1900 Occupational Health and Safety Awareness*
- FOOD 1000 Food Safety Today and Tomorrow
- FOOD 3010 Food Process 1
- FOOD 4260 Water Management in Food Processing
- HNSC 1200 Food: Facts and Fallacies
- HNSC 2160 Principles of Food Preparation and Preservation

Environmental Specialization

Students who obtain a grade of "C" or better in the courses listed below will receive a notation of "environmental specialization" on their transcript at the time of graduation.

Group A: Science Electives

Within the two science slots in the core program, choose:

- SOIL 4060 Physical Properties of Soil
- AGRI 2200 Principles of Plant and Animal Physiology

Group B: Biosystems Engineering Design Electives

Choose at least three of the following courses from the list of available design electives:

- BIOE 4460 Air Pollution Assessment and Management
- BIOE 4480 Environmental Impact Assessment
- BIOE 4590 Management of By-Products from Animal Production
- BIOE 4600 Design of Water Management Systems
- BIOE 4620 Remediation Engineering
- BIOE 4630 Pollution Prevention Practices

Group C: Complementary Studies & Free Electives

Choose 9 credit hours (minimum of 3 credit hours of complementary studies) from the following list of courses:

- ABIZ 2390 Introduction to Environmental Economics* (or equivalent)
- AGEC 2370 Principles of Ecology (or equivalent)
- CIVL 3690 Environmental Engineering Analysis
- CIVL 3700 Environmental Engineering Design
- CIVL 4350 Hazardous Waste Treatment
- GEOG 2250 Introduction to Geographic Information Systems
- GEOG 2520 Geography of Natural Resources*
- PHIL 2750 Environmental Ethics*

* Can be used as a complementary studies elective.

III. Discontinuance of Environmental Option in Biosystems Engineering

For the past number of years, Biosystems Engineering students have had the opportunity to graduate with an Environmental Option. The Environmental Option designation required students to complete four specified courses (i.e., BIOE 4480 or CIVL 4100, CIVL 3690, CIVL 3700, and PHIL 2750). Students have no flexibility in selection of courses, even in situations where there may be a timetable conflict. The proposed structure for the Environmental Specialization offers increased flexibility to students. At the same time as providing increased flexibility, students will also receive greater exposure to the area due to the increased number of courses required (6 in the Environmental Specialization compared with 4 in the Environmental Option).

It is proposed that no new students be admitted to the Environmental Option effective September 2012. Students enrolled in the Biosystems Engineering program as of September 2012 would have the opportunity to choose between the Environmental Option and the new Environmental Specialization. The Environmental Option will be discontinued upon graduation of the last student who had specified the Environmental Option.

Sustainable Building Systems Specialization

Students who obtain a grade of “C” or better in the courses listed below will receive a notation of “sustainable building systems specialization” on their transcript at the time of graduation.

Group A: Science Electives

Within the two science slots in the core program, choose:

SOIL 4060 Physical Properties of Soil

AGRI 2200 Principles of Plant and Animal Physiology OR BIOL 1412 Physiology of the Human Body

Group B: Biosystems Engineering Design Electives

Choose the following three courses from the list of available design electives:

BIOE 4412 Design of Light-Frame Building Systems

BIOE 4560 Structural Design in Wood

BIOE 4700 Alternative Building Design

Group C: Complementary Studies & Free Electives

Choose 9 credit hours (minimum of 3 credit hours of complementary studies) from the following list of courses:

CIVL 2770 Civil Engineering Materials

CIVL 3760 Structural Analysis

ENVR 3750 Green Building and Planning

EVDS 1600 Introduction to Environmental Design*

EVDS 1660 History of Culture, Ideas and Environment*

Department of Mechanical Engineering

Introduction:

MECH 3602 Manufacturing Processes Cr. Hrs. 4

+4

This course will give students hands on experience with numerous manufacturing processes, machines and systems, by having them build a miniature Stirling engine, for example, using CNC mills, lathes, conventional machine shop equipment and hand tools, the students will manufacture engine components, assemble them and trouble shoot any problems. The object of the course is to provide Mechanical and Manufacturing students with hands-on-exposure to the application of basic manufacturing process tools. The course will be offered in collaboration with the Mechanical and Manufacturing and Communication department, Red River College.

Prerequisite: MECH 2010 (or MECH 2010 or CIVL 2830). Not to be held for credit with MECH 3600 (or 025.360).

Deletions:

MECH 3600 Manufacturing Processing: Applied Fundamentals Cr.Hrs. 3

-3

MECH 2270 Principles of Engineering Materials Cr.Hrs. 4

-4

MECH 2290 Manufacturing Engineering Cr.Hrs. 3

-3

MECH 3480 Dynamics Cr.Hrs. 3

-3

MECH 3540 Modern Engineering Materials Cr.Hrs. 4

-4

MECH 4170 Program Management and System Engineering Cr.Hrs. 3

-3

Modifications:

MECH 2222 Mechanics of Materials (4)

Topics covered in this course include: axial and torsional loading, stress-strain and deformation in statically determinate/indeterminate systems, thermally induced stress, and stresses in beams (including reinforced beams) under pure bending and bending with shear. The mechanical properties of materials under various loading modes will be addressed.

Prerequisites: PHYS 1050 (016.105), ENG 1440 (or ENG 1350 or 130.135), COMP 1010 (074.101), and [MATH 1710 (136.171) or MATH 1700 (136.170)]. Not to be held for credit with MECH 2220 (025.222) or MECH 2270 (025.227).

MECH 2262 Fundamentals of Fluid Mechanics (4),

Fundamental concepts used in the analysis of fluid behaviour, pressure in stationary fluids, forces on submerged surfaces, buoyancy, integral methods, Bernoulli equation, pipeline analysis. Prerequisites: MATH 2130 or MATH 2110 (136.211). Pre or Corequisite: MATH 2132 or MATH 2100 (136.210). Not to be held for credit with MECH 2260 (025.226).

MECH 2272 Engineering Materials 1 (4),

Introduction to engineering materials; defects, strengthening mechanisms, and plasticity in engineering metals and alloys; fundamentals and application of heat treatment of metallic materials including topics such as diffusion, phase diagram, phase transformation, and thermal processing; mechanical properties of engineering metallic materials and their relationship to structure, defects, various strengthening mechanisms, and processing; structure of non-metallic polymers and ceramics. Prerequisites: [CHEM 2240 (002.224) or CHEM 1310 (002.131)] and MECH 2222 (or MECH 2220 or 025.222). Not to be held for credit with MECH 2270 (025.227), MECH 2290 (025.229) or MECH 3540 (025.354).

MECH 3170 Project Management (4),

Topics covered in this course will include project planning, scheduling, resource allocation, process analysis, layout and control. The course will make use of industrial projects for developing a strong design and analytical approach pertinent to project management. Prerequisites: MECH 2012 (or MECH 2010) or CIVL 2830. Not to be held for credit with MECH 4170 (025.417).

MECH 3482 Kinematics and Dynamics (4),

Fundamentals of 2D and 3D rigid body motions (kinematics) and the forces/moments (kinetics) needed to produce such motions. Applications will emphasize elements of machine design. Prerequisites: PHYS 1050 (016.105), ENG 1440 (or ENG 1350 or 130.135), COMP 1010 (074.101) and [MATH 1710 (136.171) or MATH 1700 (136.170)]. Not to be held for credit with MECH 2120 (025.212) or MECH 3480 (025.348).

MECH 3492 Fluid Mechanics and Applications (4),

The angular momentum principle, introduction to differential analysis of fluid motion, internal and external incompressible viscous flow, fluid machinery and multiple-path systems, fluid coupling and torque couplings and torque converters. Prerequisites: PHYS 1050 (016.105), ENG 1440 (or ENG 1350 or 130.135), COMP 1010 (074.101), [MATH 1710 (136.171) or MATH 1700 (136.170)] and MECH 2262 (or MECH 2260 or 025.226). Not to be held for credit with MECH 3490 (025.349).

MECH 3550 Robotics and Computer Numerical Control Cr.Hrs. 4
(formerly 025.355) This course builds up a foundation in the area of Computer Aided Manufacturing (CAM) such as computer numerically controlled machine tools and robotics. Intense hands on experience are provided in the laboratory sessions on part programming using Computer aided design (CAD) packages and robots to demonstrate application in the area of CAM. Several case studies and manufacturing applications will be discussed. Prerequisite: MECH 2012 (or MECH 2010 or CIVL 2830). Not to be held with the former 025.484.

MECH 3562 Introduction to Optimization Cr.Hrs. 4
The objective of this course is to develop the ability to formulate and analyze problems that will be encountered in a manufacturing system. The skills acquired will allow the students to approach problems from an optimization perspective. The students will be provided experience in related software packages. Prerequisites: MECH 2012 (or MECH 2010 or CIVL 2830) and STAT 2220 (005.222). Not to be held with the former MECH 3560 (025.356) or 025.341.

MECH 3582 Manufacturing Planning and Quality Control Cr.Hrs. 4
The course covers topics such as: Group technology, Just-in-Time, Computer aided process planning, Statistical Process Control and Manufacturing Planning and Control. Issues related to the integration of several areas that fall with CIM are emphasized. Systems approach is introduced. Prerequisite: MECH 2012 (or MECH 2010 or CIVL 2830). Not to be held for credit with MECH 3580 (or 025.358 or 025.485).

MECH 3592 Simulation Modeling and Facilities Planning Cr.Hrs. 4
The objective of this course is to introduce simulation for manufacturing operations and the concepts of facilities location and layout. The students will learn how to program WITNESS, a simulation language, and through simulation, explore the effects of facility planning; resource availability e.g., machines and quality related problems on manufacturing productivity and timing. Prerequisite: MECH 2012 (or MECH 2010) or CIVL 2830. Not to be held for credit with MECH 3590 (025.359) or 025.471.

MECH 3980 Mechanical Laboratory Cr.Hrs. 4
Laboratory course on topics that compliment and reinforce concepts developed in second and third year mechanical engineering courses. Comprehensive experiments followed by submission of laboratory reports will be required. Prerequisites: ENG 2010 (130.210), MECH 2202 (or MECH 2200 or 025.220), MECH 2262 (or MECH 2260 or 025.260) and MECH 2222 (or MECH 2220 or 025.222). Pre- or corequisite: MECH 3420 (025.342) and MECH 3502 (or MECH 3500 or 025.350) and MECH 3542 (or MECH 3540 or 025.345). Not to be held for credit with MECH 4980 (025.498) or MECH 4990 (025.499).

MECH 4560 Selected Topics in Fluid Mechanics Cr.Hrs. 4
(formerly 025.456) Topics may include: wind tunnel design; experimental techniques; some exact solutions of the conservation equations; fundamentals of turbulence; secondary flows; fluidization; elementary meteorology; fluidics; other topics of current interest. Prerequisites: MATH 3132 (or MATH 3100 or 136.310) and MECH 3490 (025.349). Not to be held with the former 006.360.

MECH 4650 Machine Design 4M Cr.Hrs. 4
(formerly 025.465) Stress analysis and the design of various machine elements; shafts and couplings, springs, threaded fasteners and power screws, clutches and power transmission components; spur, bevel, worm and helical gears; lubrication, journal and roller bearings.

Prerequisites: MECH 3482 (or MECH 2120 or 025.212) and MECH 3502 (or MECH 3500 or 025.350).

MECH 4812 Automotive Engineering Cr.Hrs. 4

Introduction to the design of passive suspension systems; control of active suspension systems; tire dynamics; ergonomics, safety and crash dynamics; automotive lighting and digital display trains. Prerequisites: MECH 3502 (or MECH 3500 or 025.350). Pre- or corequisite: MECH 3420 (025.342). Not to be held for credit with MECH 4810 (025.481).

MECH 4870 Fracture and Failure of Engineering Materials Cr.Hrs. 4

(formerly 025.487) Criteria for crack initiation and propagation leading to structural failure. Fracture mechanics and fracture toughness phenomena. Effects of structure geometry, loading rate, environment, temperature, composition and microstructure on material integrity. Prerequisites: MECH 3542 (or MECH 3540 or 025.354).

MECH 4960 Manufacturing Process 1 Cr.Hrs. 4

(formerly 025.496) this course will introduce additional or expanded versions of topics introduced in MECH 2290, "Manufacturing Engineering". Topics will be selected from relationship of manufacturing, material selection to design, process improvement techniques; casting of metals and polymers; machining and cutting; polymers and composites; processing of powders, ceramics and glasses. Prerequisite: MECH 3542 (or MECH 2290 or 025.229).

MECH 4980 Mechanic Engineering Laboratory Cr.Hrs. 2

(formerly 025.498) Advanced laboratory course on topics covering different disciplines within mechanical engineering. Comprehensive experiments followed by submission of laboratory reports will be required. One lecture/week will be provided on issues related to experimental techniques. Prerequisites: MECH 3502 (or MECH 3500 or 025.350) and MECH 3420 (025.342). Not to be held with the former 024.101.

MECH 4990 Mechanical Engineering Laboratory 2 Cr.Hrs. 2

(formerly 025.499) Advanced laboratory course on topics covering different disciplines within mechanical engineering. Comprehensive experiments followed by submission of laboratory reports will be required. One lecture/week will be provided on issues related to experimental techniques. Prerequisite: MECH 2202 (or MECH 2200 or 025.220). Pre- or corequisite: MECH 3460. (or MECH 3470 or 025.347).

NET CHANGE IN CREDIT HOURS: -16

Clayton H. Riddell Faculty of Environment, Earth and Resources

Department of Environment and Geography

Program modifications:

1.2 Available Majors, Minors, Focus Areas, Streams and Option

Available Majors: Environmental Science, Environmental Studies, Geography, Geological Sciences, Geology, Geophysics, and Physical Geography

Available Minors: Environmental Science, Environmental Studies, Geography, Geological Sciences and Physical Geography

Focus Areas (Environmental Studies and Environmental Science): Conservation & Biodiversity, Environmental Assessment, Environmental Analysis, Environmental Chemistry & Biogeochemistry, Environmental Health, Environmental Toxicology, Land Systems, Natural Resource Management, Northern Studies, Policy & Law, Stewardship, Sustainable Building, Sustainable Development, Water Resources, and Individualized Study.

Streams (Physical Geography): Atmosphere and Hydrological Sciences, General Physical Geography and Geomatics

5.5 B.A. Geography⁶

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
HONOURS¹ 120 CREDIT HOURS (72-69 credit hours in Geography)			
GEOG 1200 or GEOG 1280 and GEOG 1290) Plus 6 credit hours of Humanities ⁷ Plus 6 credit hours from the Faculty of Science	GEOG 2200, GEOG 2250, GEOG 2530 9 credit hours in Geography courses numbered at the 2000- or 3000-level ⁴ 12 credit hours in ancillary options ⁵	GEOG 3680 GEOG 3810 Plus 18 credit hours in Geography courses numbered at the 2000- or 3000-level ⁴ 6 credit hours in ancillary options ⁵	GEOG 4660 18 credit hours in Geography courses numbered at the 4000-level 6 credit hours in ancillary options ⁵
It is recommended that students complete the W course in University 1 or Year 2			
ADVANCED¹ 120 CREDIT HOURS (64-51 credit hours in Geography)			
GEOG 1200 or GEOG 1280 and GEOG 1290) Plus 6 credit hours of Humanities ⁷ Plus 6 credit hours from the Faculty of Science	GEOG 2200, GEOG 2250, GEOG 2530 9 credit hours in Geography courses numbered at the 2000- or 3000-level ⁴	GEOG 3680 GEOG 3810 Plus 6 credit hours in Geography courses numbered at the 3000-level ⁴	12 credit hours in Geography courses numbered at the 4000-level Plus 6 additional credit hours in Geography at the 2000- level or above
It is recommended that students complete the W course in University 1 or Year 2			
GENERAL² 90 CREDIT HOURS (30 credit hours in Geography)			
GEOG 1200 or GEOG 1280 and GEOG 1290) Plus 6 credit hours of Humanities ⁷ Plus 6 credit hours from the Faculty of Science	12 credit hours in Geography courses numbered at the 2000-level ³	12 credit hours in Geography courses numbered at the 3000- and/ or 4000- level ³	
It is recommended that students complete the W and M courses in University 1 or Year 2. Note: 30 credit hours, with 6 credit hours in each of 5 subject fields, must be completed in the first 60 credit hours.			
MINOR 18 CREDIT HOURS			
GEOG 1200 or GEOG 1280 and GEOG 1290)	6 credit hours in Geography courses numbered at the 2000-level	6 credit hours in Geography courses numbered at the 3000-level	
NOTES: ¹ Entrance into the Honours and Advanced degree programs is summarized in 5.2.1. The courses required in this program will satisfy the University Mathematics requirement. ² Entry into the General degree program is summarized in 5.2.1 and 5.2.2. ³ Ancillary options are chosen in consultation with the department head. ⁴ Among the 2000- and 3000-level courses, at least 6 credit hours must be systematic and at least 6 must be area studies. Systematic courses and area studies courses are listed in Section 5.6. ⁵ Among the 2000- and 3000-level courses, at least 12 credit hours must be systematic and at least 6 must be area studies. Systematic courses and area studies courses are listed in Section 5.6. Students wishing to transfer from the General to the Advanced degree program are permitted to take either GEOG 2200 and GEOG 2250, or GEOG 2530 in either third or fourth year. ⁶ Equivalent courses offered through Collège universitaire de Saint-Boniface may be used in lieu of the specified courses identified in the degree program chart. Collège universitaire de Saint-Boniface courses end in the number "1" (e.g. GEOG 1201). ⁷ May also satisfy the Faculty of Arts requirement.			

6.5 B.Sc. Physical Geography^{1,2}

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
HONOURS 120 CREDIT HOURS			
GEOG 1290 ² (or GEOG 1290²)	GEOG 2200 ³ , GEOG 2250 ³ , GEOG 2270 , GEOG 2629 GEOG 2540, GEOG GEOG 4660		
PHYS 1020 ³ , MATH 1500 ⁴	GEOG 2300, GEOG 2310, GEOG 3680 <u>GEOG 3810</u>		
PHYS 1030 ³ , MATH 1300 ⁴ ; or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴	2440 <u>GEOG 2530</u> , GEOG 2550	9 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken	
Plus 6 credit hours from the Faculty of Arts	Whichever of, PHYS 1030 ³ , MATH 1300 ⁴ , or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 not yet taken		
It is recommended that students complete the W course in University 1 or Year 2			
Plus a Stream approved by a Riddell Faculty student advisor. Honours Stream requirements are as follows: 39 credit hours of 2000- (or higher) level courses, of which 24 credit hours must be at the 3000- or 4000-level and include GEOG 4660.			
HONOURS COOPERATIVE OPTION 120 CREDIT HOURS			
GEOG 1290 ² (or GEOG 1290²)	GEOG 2200 ³ , GEOG 2250 ³ , GEOG 2270 , GEOG 2629 GEOG 2540, GEOG GEOG 4660		
PHYS 1020 ³ , MATH 1500 ⁴	GEOG 2300, GEOG 2310, GEOG 3680 <u>GEOG 3810</u> , ENVR 3900, ENVR 3980		
PHYS 1030 ³ , MATH 1300 ⁴ ; or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴	2440 <u>GEOG 2530</u> , GEOG 2550, ENVR 3910	9 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken	ENVR 3990, ENVR 3920 (ENVR 4980 and ENVR 4910 are optional)
Plus 6 credit hours from the Faculty of Arts	Whichever of, PHYS 1030 ³ , MATH 1300 ⁴ , or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken		
It is recommended that students complete the W course in University 1 or Year 2			
Plus a Stream approved by a Riddell Faculty student advisor. Honours Stream requirements are as follows: 39 credit hours of 2000- (or higher) level courses, of which 24 credit hours must be at the 3000- or 4000-level and include GEOG 4660.			
MAJOR 120 CREDIT HOURS			
GEOG 1290 ² (or GEOG 1290²)	GEOG 2200 ³ , GEOG 2250 ³ , GEOG 2270 , GEOG 2629 GEOG 2540, GEOG		
PHYS 1020 ³ , MATH 1500 ⁴	GEOG 2300, GEOG 2310, GEOG 3680 <u>GEOG 3810</u>		
PHYS 1030 ³ , MATH 1300 ⁴ ; or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴	2440 <u>GEOG 2530</u> , GEOG 2550	9 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken	
Plus 6 credit hours from the Faculty of Arts	Whichever of, PHYS 1030 ³ , MATH 1300 ⁴ , or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken		
It is recommended that students complete the W course in University 1 or Year 2			
Plus a Stream approved by a Riddell Faculty student advisor. Major Stream requirements are as follows: 30 credit hours of 2000- (or higher) level courses, of which 18 credit hours must be at the 3000- or 4000-level.			
MAJOR COOPERATIVE OPTION 120 CREDIT HOURS			
GEOG 1290 ² (or GEOG 1290²)	GEOG 2200 ³ , GEOG 2250 ³ , GEOG 2270 , GEOG 2629 GEOG 2540, GEOG ENVR 3990, ENVR		
PHYS 1020 ³ , MATH 1500 ⁴	2300 <u>GEOG 2270</u> , GEOG 2310, GEOG 3680 <u>GEOG 3810</u> , ENVR 3900, ENVR 3980, ENVR 3920 (ENVR 4980 and ENVR 4910 are optional)		
PHYS 1030 ³ , MATH 1300 ⁴ ; or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴	2440 <u>GEOG 2530</u> , GEOG 2550, ENVR 3910	9 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken	
Plus 6 credit hours from the Faculty of Arts	Whichever of, PHYS 1030 ³ , MATH 1300 ⁴ , or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken		

Note:

- Honours in Geography may be taken in combination with the program of Central and East European Studies (see the department head), Cross-disciplinary Minor programs are available using GEOG 3590 (Asian Studies program). In addition, courses ~~GEOG 2450~~ GEOG 2900, GEOG 2570, GEOG 3431, GEOG 3480³ and ~~GEOG 3700² and GEOG 3900~~ may be used in combination with the Honours, Advanced, and Minor programs in Canadian Studies.
- To fulfil prerequisite requirements, a grade of "C" must be achieved, unless otherwise stated, in any course stipulated as a prerequisite to a further course.
- Students should review the current course topics available through GEOG 3740 (6), GEOG 3750 (3), GEOG 3760 (6), GEOG 3770 (3) and GEOG 4670 (3). Also, all courses are not offered every year or every term. The course schedule for the current academic term is available from the online calendar at umanitoba.ca/calendar.
- Students registering in certain courses may be required to participate in field trips or field components and pay a portion of the associated expenses. For details, contact the Department of Environment and Geography general office.

6.5 B.Sc. Physical Geography^{1,2}

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
HONOURS 120 CREDIT HOURS			
GEOG 1290 ² (or GEOG 1200²) PHYS 1020 ³ , MATH 1500 ⁴ PHYS 1030 ³ , MATH 1300 ⁴ ; or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ Plus 6 credit hours from the Faculty of Arts	GEOG 2200 ⁸ , GEOG 2250 ⁸ , GEOG 2270 , GEOG 2620 <u>GEOG 2540</u> , GEOG 2540 , GEOG 3660 <u>GEOG 3810</u> GEOG 2300 , GEOG 2310 , GEOG 2530 , GEOG 2550 2440 <u>GEOG 2530</u> , <u>GEOG 2550</u> Which ever of, PHYS 1030 ³ , MATH 1300 ⁴ , or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 not yet taken	9 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken	GEOG 4660
It is recommended that students complete the W course in University 1 or Year 2			
Plus a Stream approved by a Riddell Faculty student advisor. Honours Stream requirements are as follows: 39 credit hours of 2000- (or higher) level courses, of which 24 credit hours must be at the 3000- or 4000-level and include GEOG 4660.			
HONOURS COOPERATIVE OPTION 120 CREDIT HOURS			
GEOG 1290 ² (or GEOG 1200²) PHYS 1020 ³ , MATH 1500 ⁴ PHYS 1030 ³ , MATH 1300 ⁴ ; or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ Plus 6 credit hours from the Faculty of Arts	GEOG 2200 ⁸ , GEOG 2250 ⁸ , GEOG 2270 , GEOG 2620 <u>GEOG 2540</u> , GEOG 2540 , GEOG 3660 <u>GEOG 3810</u> , ENVR 3900, ENVR 3980 GEOG 2300 , GEOG 2310 , GEOG 2530 , GEOG 2550 , ENVR 3910 2900 Which ever of, PHYS 1030 ³ , MATH 1300 ⁴ , or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken	9 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken	ENVR 3990, ENVR 3920 (ENVR 4980 and ENVR 4910 are optional)
It is recommended that students complete the W course in University 1 or Year 2			
Plus a Stream approved by a Riddell Faculty student advisor. Honours Stream requirements are as follows: 39 credit hours of 2000- (or higher) level courses, of which 24 credit hours must be at the 3000- or 4000-level and include GEOG 4660.			
MAJOR 120 CREDIT HOURS			
GEOG 1290 ² (or GEOG 1200²) PHYS 1020 ³ , MATH 1500 ⁴ PHYS 1030 ³ , MATH 1300 ⁴ ; or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ Plus 6 credit hours from the Faculty of Arts	GEOG 2200 ⁸ , GEOG 2250 ⁸ , GEOG 2270 , GEOG 2620 <u>GEOG 2540</u> , GEOG 2540 , GEOG 3660 <u>GEOG 3810</u> GEOG 2300 , GEOG 2310 , GEOG 2530 , GEOG 2550 2440 <u>GEOG 2530</u> , <u>GEOG 2550</u> Which ever of, PHYS 1030 ³ , MATH 1300 ⁴ , or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken	9 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken	
It is recommended that students complete the W course in University 1 or Year 2			
Plus a Stream approved by a Riddell Faculty student advisor. Major Stream requirements are as follows: 30 credit hours of 2000- (or higher) level courses, of which 18 credit hours must be at the 3000- or 4000-level.			
MAJOR COOPERATIVE OPTION 120 CREDIT HOURS			
GEOG 1290 ² (or GEOG 1200²) PHYS 1020 ³ , MATH 1500 ⁴ PHYS 1030 ³ , MATH 1300 ⁴ ; or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ Plus 6 credit hours from the Faculty of Arts	GEOG 2200 ⁸ , GEOG 2250 ⁸ , GEOG 2270 , GEOG 2620 <u>GEOG 2540</u> , GEOG 2540 , GEOG 3660 <u>GEOG 3810</u> , ENVR 3900, ENVR 3980, ENVR 3920 (ENVR 4980 and ENVR 4910 are optional) GEOG 2300 , GEOG 2310 , GEOG 2530 , GEOG 2550 , ENVR 3910 2900 Which ever of, PHYS 1030 ³ , MATH 1300 ⁴ , or 6 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken	9 credit hours from GEOL 1340 ⁵ , COMP 1010, CHEM 1300, CHEM 1310, STAT 1000, STAT 2000, BIOL 1020 ⁶ , BIOL 1030 ⁶ , MATH 1700 ⁴ not yet taken	

It is recommended that students complete the W course in University 1 or Year 2

Plus a Stream approved by a Riddell Faculty student advisor. Major Coop Stream requirements are as follows: 30 credit hours of 2000- (or higher) level courses, of which 18 credit hours must be at the 3000- or 4000-level.

NOTE: Students in the Major Coop are required to maintain an overall degree Grade Point Average of 2.50.

MINOR 18 CREDIT HOURS

GEOG 1290 ² (or GEOG 4300 ²)	15 credit hours selected from 2000-, 3000-, or 4000-level courses designated as Physical Geography (PS) or Techniques (TS) courses in the Geography course descriptions defined in sections 5.6 in this Chapter.
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NOTES:

¹Entrance into the degree programs is summarized in 5.2.1 in this Chapter.

²The courses required in this program will satisfy the University Mathematics requirement.

³PHYS 1050 and PHYS 1070 may be used in lieu of PHYS 1020 and PHYS 1030, respectively.

⁴MATH 1510 or MATH 1520 may be used in lieu of MATH 1500; or MATH 1690 may be used in place of MATH 1500 (or equivalent) and MATH 1700.

⁵GEOL 1440 may be used in lieu of GEOL 1340.

⁶BIOL 1000 and BIOL 1010 may be used in lieu of BIOL 1020 and BIOL 1030.

⁷Equivalent courses offered through Collège universitaire de Saint-Boniface may be used in lieu of the specified courses identified in the degree program chart. Collège universitaire de Saint-Boniface courses end in the number 1 (e.g. GEOG 1291).

⁸GEOG 2221 may be used in lieu of GEOG 2200 and GEOG 2250.

Note:

- To fulfil prerequisite requirements a grade of 'C' must be achieved, unless otherwise stated, in any course stipulated as a prerequisite to a further course.

- Students should review the course topics available for GEOG 3740 (6), GEOG 3750 (3), GEOG 3760 (6), GEOG 3770 (3) and GEOG 4670 (3). Also, all courses are not offered every year. The course schedule for the current academic term is available from the online calendar at umanitoba.ca/calendar.

- Students registering in certain courses may be required to participate in field trips or field components and pay a portion of the associated expenses. For details, contact the Department of Environment and Geography general office.

IMPORTANT: The Honours and Major programs need not be completed in the course order described in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.

7.5 Bachelor of Environmental Science^{1,2}

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
HONOURS 120 CREDIT HOURS			
ENVR 1000, ENVR 2000, BIOL 1020, BIOL 1030, CHEM 1300, CHEM 1310, MATH 1500 ³ , STAT 1000 Plus 6 credit hours from the Faculty of Arts ⁴	ENVR 2170, ENVR 2650 ENVR 3160, BIOL 2300 (or ENVR 4110, ENVR 4500) AGEC 2370), ECON 2390 (ABIZ 2390), PHYS 1020 ⁵ , STAT 2000 One of PHYS 1030 ⁵ , MATH 1200, MATH 1300 ⁶ , MATH 1700 ⁶ One of GEOG 1290 or GEOL 1340 (or GEOL 1440)		Plus 33 credit hours in an approved Focus Area ⁷
It is recommended that students complete the W course in University 1 or Year 2			
HONOURS COOPERATIVE OPTION 120 CREDIT HOURS			
ENVR 1000, ENVR 2000, BIOL 1020, BIOL 1030, CHEM 1300, CHEM 1310, MATH 1500 ³ , STAT 1000 Plus 6 credit hours from the Faculty of Arts ⁴	ENVR 2170, ENVR 2650 ENVR 3160, BIOL 2300 (or ENVR 4110, ENVR 4500) AGEC 2370), ECON 2390 (ABIZ 2390), PHYS 1020 ⁵ , STAT 2000, ENVR 2900 One of PHYS 1030 ⁵ , MATH 1200, MATH 1300 ⁶ , MATH 1700 ⁶ One of GEOG 1290 or GEOL 1340 (or GEOL 1440)		Plus 33 credit hours in an approved Focus Area ⁷ ENVR 3900, ENVR 3980, ENVR 3990, ENVR 3910, ENVR 3920 (ENVR 4980 and ENVR 4910 are optional)
It is recommended that students complete the W course in University 1 or Year 2			
MAJOR 120 CREDIT HOURS			
ENVR 1000, ENVR 2000, BIOL 1020, BIOL 1030, CHEM 1300, CHEM 1310, MATH 1500 ³ , STAT 1000 Plus 6 credit hours from the Faculty of Arts ⁴	ENVR 2170, ENVR 2650 ENVR 3160, BIOL 2300 (or ENVR 4110, ENVR 4500) AGEC 2370), ECON 2390 (ABIZ 2390), PHYS 1020 ⁵ , STAT 2000 One of PHYS 1030 ⁵ , MATH 1200, MATH 1300 ⁶ , MATH 1700 ⁶ One of GEOG 1290 or GEOL 1340 (or GEOL 1440)		Plus 33 credit hours in an approved Focus Area ⁷
It is recommended that students complete the W course in University 1 or Year 2			
MAJOR COOPERATIVE OPTION 120 CREDIT HOURS			
ENVR 1000, ENVR 2000, BIOL 1020, BIOL 1030, CHEM 1300, CHEM 1310, MATH 1500 ³ , STAT 1000 Plus 6 credit hours from the Faculty of Arts ⁴	ENVR 2170, ENVR 2650 ENVR 3160, BIOL 2300 (or ENVR 4110, ENVR 4500) AGEC 2370), ECON 2390 (ABIZ 2390), PHYS 1020 ⁵ , STAT 2000 One of PHYS 1030 ⁵ , MATH 1200, MATH 1300 ⁶ , MATH 1700 ⁶ One of GEOG 1290 or GEOL 1340 (or GEOL 1440)		Plus 33 credit hours in an approved Focus Area ⁷ ENVR 3900, ENVR 3980, ENVR 3990, ENVR 3910, ENVR 3920 (ENVR 4980 and ENVR 4910 are optional)
It is recommended that students complete the W course in University 1 or Year 2			
GENERAL 90 CREDIT HOURS			
ENVR 1000, ENVR 2000, BIOL 1020, BIOL 1030, CHEM 1300, CHEM 1310, MATH 1500 ³ , STAT 1000 Plus 6 credit hours from the Faculty of Arts ⁴	ENVR 2170, ENVR 2650 ENVR 3160, BIOL 2300 (or ENVR 4110, ENVR 4500) AGEC 2370), ECON 2390 (ABIZ 2390), PHYS 1020 ⁵ , STAT 2000 One of PHYS 1030 ⁵ , MATH 1200, MATH 1300 ⁶ , MATH 1700 ⁶ One of GEOG 1290 or GEOL 1340 (or GEOL 1440)		Plus 9 credit hours in an approved Focus Area
MINOR 18 CREDIT HOURS			
ENVR 1000, ENVR 2000	12 credit hours of ENVR courses number at the 2000-level or above.		

NOTES:

¹Entrance into the degree programs is summarized in 7.2.1 of this Chapter.

²The courses required in this program will satisfy the university mathematics requirements.

³MATH 1510 or MATH 1520 may be taken in place of MATH 1500 (or equivalent).

⁴It is recommended that students consider a selection from List A below when selecting courses from the Faculty of Arts.

⁵PHYS 1050 and PHYS 1070 may be used in lieu of PHYS 1020 and PHYS 1030, respectively.

⁶MATH 1310 and MATH 1710 may be taken in place of MATH 1300 and MATH 1700 (or equivalent), respectively.

⁷Focus Area courses must include a minimum of 21 credit hours at the 3000- and/or 4000-level. Focus Area performance requirements are defined in section 7.3 of this Chapter.

IMPORTANT: The Honours and Major programs need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.

NOTE:

• To fulfil prerequisite requirements, a grade of 'C' must be achieved, unless otherwise stated, in any course stipulated as a prerequisite to a further course.

• Students should review the current course topics available through ENVR 2010 (1.5), ENVR 2020 (3), ENVR 3000 (3), ENVR 3010 (1.5), ENVR 3020 (3), ENVR 4000 (3), ENVR 4010 (1.5), and ENVR 4020 (3) as well as those offered through GEOG 3740 (6), GEOG 3750 (3), GEOG 3760 (6), GEOG 3770 (3) and GEOG 4670 (3). Also, all courses are not offered every year or every term. The course schedule for the current academic term is available from the online calendar at umanitoba.ca/calendar.

• Students registering in certain courses may be required to participate in field trips or field components and pay a portion of the associated expenses. For details, contact the Department of Environment and Geography general office.

• Equivalent courses offered through Collège universitaire de Saint-Boniface may be used in lieu of the specified course identified in the program requirements chart. Collège universitaire de Saint-Boniface courses end in the number '1' (e.g. CHEM 1301).

7.6 Bachelor of Environmental Studies^{1,2}

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
HONOURS 120 CREDIT HOURS			
ENVR 1000, ENVR 2000, GEOG 1280 ³ , GEOG 1290 ³ , NATV 1220 ⁴ , BIOL 1010 ⁵ , STAT 1000 Plus 3 credit hours from the Faculty of Arts ⁶	ENVR 2350, ENVR—2650 ⁷ , ENVR 3160, GEOG—3680 ⁸ , GEOG 3810, ENVR 4110, ENVR 4500 ECON 2390 (ABIZ 2390), BIOL 2390 ⁵		Plus 33 credit hours in an approved Focus Area ⁹
	Plus 3 credit hours from List B ⁷		
It is recommended that students complete the W course in University 1 or Year 2			
HONOURS COOPERATIVE OPTION 120 CREDIT HOURS			
ENVR 1000, ENVR 2000, GEOG 1280 ³ , GEOG 1290 ³ , NATV 1220 ⁴ , BIOL 1010 ⁵ , STAT 1000 Plus 3 credit hours from the Faculty of Arts ⁶	ENVR 2350, ENVR—2650 ⁷ , ENVR 3160, GEOG—3680 ⁸ , GEOG 3810, ENVR 4110, ENVR 4500 ECON 2390 (ABIZ 2390), BIOL 2390 ⁵ , ENVR 2900,		Plus 33 credit hours in an approved Focus Area ⁹
	Plus 3 credit hours from List B ⁷	ENVR 3900, ENVR 3910, ENVR 3920, ENVR 3980, ENVR 3990 (ENVR 4980 and ENVR 4910 are optional)	
It is recommended that students complete the W course in University 1 or Year 2			
MAJOR 120 CREDIT HOURS			
ENVR 1000, ENVR 2000, GEOG 1280 ³ , GEOG 1290 ³ , NATV 1220 ⁴ , BIOL 1010 ⁵ , STAT 1000 Plus 3 credit hours from the Faculty of Arts ⁶	ENVR 2350, ENVR—2650 ⁷ , ENVR 3160, GEOG—3680 ⁸ , GEOG 3810, ENVR 4110 ECON 2390 (ABIZ 2390), BIOL 2390 ⁵		Plus 33 credit hours in an approved Focus Area ⁹
	Plus 3 credit hours from List B ⁷		
It is recommended that students complete the W course in University 1 or Year 2			
MAJOR COOPERATIVE OPTION 120 CREDIT HOURS			
ENVR 1000, ENVR 2000, GEOG 1280 ³ , GEOG 1290 ³ , NATV 1220 ⁴ , BIOL 1010 ⁵ , STAT 1000 Plus 3 credit hours from the Faculty of Arts ⁶	ENVR 2350, ENVR—2650 ⁷ , ENVR 3160, GEOG—3680 ⁸ , GEOG 3810, ENVR 4110 ECON 2390 (ABIZ 2390), BIOL 2390 ⁵ , ENVR 2900		Plus 33 credit hours in an approved Focus Area ⁹
	Plus 3 credit hours from List B ⁷	ENVR 3900, ENVR 3910, ENVR 3920, ENVR 3980, ENVR 3990 (ENVR 4980 and ENVR 4910 are optional)	
It is recommended that students complete the W course in University 1 or Year 2			
GENERAL 90 CREDIT HOURS			
ENVR 1000, ENVR 2000, GEOG 1280 ³ , GEOG 1290 ³ , NATV 1220 ⁴ , BIOL 1010 ⁵ , STAT 1000 Plus 3 credit hours from the Faculty of Arts ⁶	ENVR 2350, ENVR—2650 ⁷ , ENVR 3160, GEOG—3680 ⁸ , GEOG 3810, ENVR 4110 ECON 2390 (ABIZ 2390), BIOL 2390 ⁵		Plus 9 credit hours in an approved Focus Area
	Plus 3 credit hours from List B ⁷		
MINOR 18 CREDIT HOURS			
ENVR 1000, ENVR 2000	12 credit hours of ENVR courses numbered at the 2000-level or above.		

NOTES:

¹Entrance into the degree programs is summarized in 7.2.2.

²The courses required in this program will satisfy the university mathematics requirements.

³GEOG 1200 or GEOG 1201, GEOG 1281 and GEOG 1291 may be used in lieu of GEOG 1280 and GEOG 1290.

⁴Students are permitted to substitute NATV 1220 with another 3 credit hours from the department (not a language) or approved alternative course. See the student advisor for assistance.

⁵Students with an interest in the Conservation and Biodiversity Focus Area are advised to complete the combination of BIOL 1020 and BIOL 1030 as well as BIOL 2300 (or AGE 2370) instead of BIOL 1010 and BIOL 2390.

⁶It is recommended that students consider a selection from List A below when selecting courses from the Faculty of Arts.

⁷Students must complete 3 credit hours of course work containing significant international content. Students are referred to List B for a list of available courses. Students may substitute with another course as approved by the student advisor.

⁹Focus Area courses must include a minimum of 21 credit hours at the 3000- and/or 4000-level. Focus Area performance requirements are defined in section 7.3 of this Chapter.

IMPORTANT: The Honours and Major programs need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.

NOTE:

- To fulfil prerequisite requirements, a grade of 'C' must be achieved, unless otherwise stated, in any course stipulated as a prerequisite to a further course.
- Students should review the current course topics available through ENVR 2010 (1.5), ENVR 2020 (3), ENVR 3010 (1.5), ENVR 3020 (3), ENVR 4000 (3), ENVR 4010 (1.5), and ENVR 4020 (3) as well as those offered through GEOG 3740 (6), GEOG 3750 (3), GEOG 3760 (6), GEOG 3770 (3) and GEOG 4670 (3). Also, all courses are not offered every year or every term. The course schedule for the current academic term is available from the online calendar at umanitoba.ca/calendar.
- Students registering in certain courses may be required to participate in field trips or field components and pay a portion of the associated expenses. For details, contact the Department of Environment and Geography general office.
- Equivalent courses offered through Collège universitaire de Saint-Boniface may be used in lieu of the specified course identified in the entrance requirements chart. Collège universitaire de Saint-Boniface courses end in the number '1' (e.g. GEOG 1281).

List A: Recommended List of Faculty of Arts Electives. Students may wish to consider courses from the following list when identifying appropriate sections from the Faculty of Arts.

ANTH 1210 Human Origins and Antiquity Cr.Hrs.3
ANTH 1220 Cultural Anthropology Cr.Hrs.3
ANTH 1520 Critical Cultural Anthropology Cr.Hrs.3
~~ECON 1200 Principles of Economics Cr.Hrs.6~~
ECON 1010 Introduction to Microeconomics Principles Cr.Hrs.3
ECON 1020 Introduction to Macroeconomics Principles Cr.Hrs.3
ECON 1210 Introduction to Canadian Economic Issues and Policies Cr.Hrs.3
ECON 1220 Introduction to Global and Environmental Economic Issues and Policies Cr.Hrs.3
NATV 1200 The Native Peoples of Canada Cr.Hrs.6
NATV 1240 The Native Peoples of Canada, Part 2 Cr.Hrs.3
PHIL 1200 Introduction to Philosophy Cr.Hrs.6
PHIL 1290 Critical Thinking Cr.Hrs.3
PHIL 1320 Introductory Logic Cr.Hrs.6
PHIL 1510 Historical Introduction to Philosophy Cr.Hrs.6
RLGN 1420 Ethics in World Religions Cr.Hrs.3
RLGN 2180 Theory of Nature Cr.Hrs.3

List B: Courses containing significant international content:

ABIZ 1010 Economics of World Issues and Policies Cr.Hrs.3
ECON 2550 Political Economy 2: Economic Growth and Fluctuations in a Global Economic Environment Cr.Hrs.3
ECON 3670 International Trade Cr.Hrs.3
POLS 2040 Introduction to International Relations Cr.Hrs.6
POLS 3220 Globalization and the World Economy Cr.Hrs.3
POLS 3250 International Political Economy Cr.Hrs.3
GEOG 4260 Sacred Lands Cr.Hrs.3

or as approved by the student advisor

Department of Geological Sciences

Program Modifications:

8.4 B.Sc. Geological Sciences (Geology)^{1,2,6}

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
HONOURS GEOLOGY 120 CREDIT HOURS			
GEOL 1340 ⁶ -1340 ⁷ (B) and one of GEOL 1400, GEOL 1410, or GEOL 1420 6 credit hours from the Faculty of Arts	GEOL 2440, GEOL 2500, GEOL 2520, GEOL 2060, GEOL 3110, GEOL 3130, GEOL 4670, GEOL 4870 GEOL 2530, GEOL 2800, GEOL 2770, GEOL 3310, GEOL 3440, GEOL 3490, GEOL 3910 ⁵ 3910 ⁵ 9-6 credit hours of Geological Sciences Electives from Lists A and B ⁴	GEOL 3900, GEOL 4910 ⁵ 4910 ⁵ 4-12 credit hours of Geological Sciences Electives from Lists A and B ⁴ not yet taken.	
CHEM 1300, PHYS 1020 ² , and one of MATH 1500 ³ or MATH 1300 ³ must be completed in University 1 or Year 2. It is recommended that students complete the W course in University 1 or Year 2.			
MAJOR GEOLOGY 120 CREDIT HOURS			
GEOL 1340 ⁶ -1340 ⁷ (C+) and one of GEOL 1400, GEOL 1410, or GEOL 1420 6 credit hours from the Faculty of Arts	GEOL 2440, GEOL 2500, GEOL 2520, GEOL 2060, GEOL 3110, GEOL 3130, GEOL 4670, GEOL 4920 GEOL 2530, GEOL 2800, GEOL 2770, GEOL 3310, GEOL 3440, GEOL 3490, GEOL 3910 ⁵ 3910 ⁵ 3 credit hours of Geological Sciences Electives from Lists A and B ⁴	GEOL 3900, GEOL 4910 ⁵ 4910 ⁵ 15 credit hours of Geological Sciences Electives from Lists A and B ⁴ not yet taken	
CHEM 1300, PHYS 1020 ² , and one of MATH 1500 ³ or MATH 1300 ³ must be completed in University 1 or Year 2. It is recommended that students complete the W course in University 1 or Year 2.			

Notes:

¹The courses required in this program will satisfy the University Mathematics requirement.

²PHYS 1050 may be used in lieu of PHYS 1020.

³MATH 1510 or MATH 1520 may be used in lieu of MATH 1500.

⁴MATH 1310 may be used in lieu of MATH 1300.

⁵Among ²Students will register for GEOL 3910 and GEOL 4910 in Summer term. NOTE: Students should be aware that they are expected to contribute to transportation and accommodation costs. See the department office at the beginning of each year for information.

⁶Among ²Students will register for GEOL 3910 and GEOL 4910 in Summer term. NOTE: Students should be aware that they are expected to contribute to transportation and accommodation costs. See the department office at the beginning of each year for information.

⁷IMPORTANT: The Honours and Major programs need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program. (Letters in brackets indicate the minimum prerequisite standing in a specific course required for entry to the program).

⁸Students ²Students who have GEOL 1440 (007.144) or the former 007.124 should consult with the department. At the discretion of the department, GEOL 1440 (007.144) or 007.124 may be permitted in lieu of GEOL 1340 for entry.

One of GEOL 1400, GEOL 1410, or GEOL 1420 is highly recommended to be taken in Year 1, but will not be considered when assessing entrance requirements to the program. If this requirement is not fulfilled in Year 1, it must be completed by the end of Year 2.

NOTE:

• To fulfil prerequisite requirements, a grade of 'C' must be achieved in any course stipulated as prerequisite to a further course in Geological Sciences.

• All courses are not offered every year. The course schedule for the current academic term is available from the online calendar at umanitoba.ca/calendar

• Students registering in certain courses may be required to pay a portion of the costs associated with field trips. For details, contact the department general office.

• Equivalent courses offered through Collège universitaire de Saint Boniface may be used in lieu of the specified courses identified in the degree program chart. Collège universitaire de Saint-Boniface courses end in the number '1' (e.g. CHEM 1301).

Other Note 1: Geological Sciences - Geology Electives Lists A and B

List A Electives: Honours and Major students must complete a minimum of 12-9 credit hours from the following courses:

- GEOL 2390 Environmental Geology (3)
- GEOL 3290 Metamorphic Structure and Tectonics (3)L
- GEOL 4280 Instrumental Techniques In Geology (3)L
- GEOL 4300 Mineral Deposits (3)L
- GEOL 4520 Petroleum Geology (3)L
- GEOL 4890 Basin Analysis (3)L

List B Electives: Honours students are required to complete a minimum of ~~45-9~~ credit hours; Major students must complete a minimum of 6 credit hours from the following courses:

GEOL 3140 Gemology (3)L
 GEOL 3420 Engineering Geology (3)
GEOL 3450 Hydrogeology (3)L
 GEOL 3740 Exploration Seismology (3)L
 GEOL 3750 Geology and Geophysics of the Planets (3)L
 GEOL 3810 Applied Geophysics (3)L
 GEOL 4260 Applied Geophysics Field Course (3)
 GEOL 4270 Advanced Studies in Earth Sciences (3)
~~GEOL 4290 Topics in Environmental Geosciences (3)L~~
 GEOL 4310 Paleontologic Principles (3)L
~~GEOL 4360 Mineral Exploration Techniques (3)L~~
 GEOL 4370 Global Change (3)
~~GEOL 4630 Geolimnology (3)~~
~~GEOL 4660 Volcanology (3)L~~
 GEOL 4740 Geophysics Field School (6)
GEOG 2250 Introduction to Geographic Information Systems (3)L
~~GEOL 4830 Remote Sensing and Geological Information Systems (3)L~~
 and/or up to 6 credit hours of additional courses not yet completed from List A.

NOTE: With departmental approval, up to 6 credit hours of 2000-level or higher courses from other departments may be substituted for courses in List B in order to satisfy professional registration (APEGM) requirements.

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UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
HONOURS GEOPHYSICS 120 CREDIT HOURS			
GEOL 1340(B)6 and one of: GEOL 1400, GEOL 1410, or GEOL 1420 PHYS 1050(B) [or PHYS 1020(B+)], PHYS 1070(B), MATH 1210 ¹ , MATH 1510 ¹ (B), and MATH 1710 ¹ (B) [or MATH 1500(B) and MATH 1700(B)1] Plus 6 credit hours from the Faculty of Arts, which should include the required 'W' course	GEOL 2060, GEOL 2440, GEOL 2520, GEOL 2530, GEOL 2540 PHYS 2390, PHYS 2490, MATH 2130 ² , MATH 2132 ² , COMP 1010	GEOL 3130, GEOL 3740, GEOL 3810, GEOL 4670, GEOL 4740 ⁴ , GEOL 4810, GEOL 4870, CHEM 1300, PHYS 2600, MATH 2120 ³ , 9 credit hours of Geological Sciences Geophysics Electives from List A, 6 credit hours of Geological Sciences Geophysics Electives from List P and 9-6 credit hours of Geological Sciences Geophysics Electives from List B.	
30 Credit Hours	30 Credit Hours	60 Credit Hours for Year 3 and 4 ⁷	

MAJOR GEOPHYSICS 120 CREDIT HOURS			
GEOL 1340(C+)6 and one of: GEOL 1400, GEOL 1410, or GEOL 1420 PHYS 1050(C+) [or PHYS 1020(B)], PHYS 1070(C), MATH 1210 ¹ , MATH 1510 ¹ (C+), and MATH 1710 ¹ (C) [or MATH 1500(C+) and MATH 1700(C)1] 6 credit hours from the Faculty of Arts, which should include the required 'W' course	GEOL 2060, GEOL 2440, GEOL 2520, GEOL 2530, GEOL 2540 PHYS 2390, PHYS 2490, MATH 2130 ² , MATH 2132 ² , COMP 1010	GEOL 3130, GEOL 3740, GEOL 3810, GEOL 4670, GEOL 4810, GEOL 4920, CHEM 1300, PHYS 2600, MATH 2120 ³ , GEOL 4740 ⁴ 6 credit hours of Geological Sciences Geophysics Electives from List A, 3 credit hours of Geological Sciences Geophysics Electives from List P and 6 credit hours of Geological Sciences Geophysics Electives from List B.	

NOTES:

¹MATH 1690 may be taken in place of MATH 1500 (or MATH 1510) and MATH 1700 (or MATH 1710); MATH 1300 may be taken in place of MATH 1210. Selection of MATH 1300 or MATH 1210 will determine the prerequisite background for Mathematics courses required in years 2, 3 and 4.

²MATH 2720 and MATH 2730 may be taken in place of MATH 2130 and MATH 2132. Students should note that MATH 1300 is a prerequisite to MATH 2720 and a corequisite to MATH 2730.

³MATH 2600 may be taken in place of MATH 2120

⁴GEOL 4740 will normally be taken immediately following the spring examinations on or about May 1 and will continue for approximately three weeks. Registration will show as Summer Term. NOTE: Students are expected to contribute to the costs of transportation, lodging, and food. Contact the Department for further information.

⁵The courses required in this program satisfy the university mathematics requirement.

⁶Students who have GEOL 1440 (007.144) or the former 007.124 should consult with the department. At the discretion of the department, GEOL 1440 (007.144) or 007.124 may be permitted in lieu of GEOL 1340 for entry.

One of GEOL 1400, GEOL 1410, or GEOL 1420 is highly recommended to be taken in Year 1, but will not be considered when assessing entrance requirements to the program. If this requirement is not fulfilled in Year 1, it must be completed by the end of Year 2.

⁷**IMPORTANT:** The Honours and Major programs need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program. (Letters in brackets indicate the minimum prerequisite standing required for further study)

NOTE:

- To fulfill prerequisite requirements, a grade of 'C' must be achieved in any course stipulated as prerequisite to a further course in Geological Sciences.
- All courses are not offered every year. The course schedule for the current academic term is available from the online calendar at umanitoba.ca/calendar
- Students registering in certain courses may be required to pay a portion of the costs associated with field trips. For details, contact the department general office.
- Equivalent courses offered through Collège universitaire de Saint-Boniface may be used in lieu of the specified courses identified in the degree program chart. Collège universitaire de Saint-Boniface courses end in the number '1' (e.g. PHYS 1051).

Other Note 1: Geological Sciences - Geophysics Electives Lists A, B and P

List A Electives: Honours students are required to complete a minimum of 9 credit hours; Major students must complete a minimum of 6 credit hours from the following courses:

GEOL 4250 Theory and Application of Geophysical Inversion Meth-

	ods (3)L
GEOL 4320	Physics of the Earth: Seismology and Heat Flow (3)
GEOL 4330	Physics of the Earth: Geomagnetism and Gravity (3)

List B Electives: Honours students are required to complete a minimum of 9-6 credit hours; Major students must complete a minimum of 6 credit hours from the following courses:

GEOL 2390	Environmental Geology (3)
GEOL 2770	Principles of Inorganic Geochemistry (3)L
GEOL 3110	Petrogenesis of Igneous Rocks (3)L
GEOL 3290	Metamorphic Structure and Tectonics (3)L
GEOL 3420	Engineering Geology (3)
<u>GEOL 3440</u>	<u>Structure and Tectonics (3)L</u>
<u>GEOL 3450</u>	<u>Hydrogeology (3)L</u>
GEOL 3490	Glacial Geology and Geomorphology (3)L
GEOL 3750	Geology and Geophysics of the Planets (3)L
GEOL 3900	Sedimentology (3)L
GEOL 3910	Introduction to Field Mapping (3)
GEOL 4270	Advanced Studies in Earth Sciences (3)
GEOL 4300	Mineral Deposits (3)L
<u>GEOL 4360</u>	<u>Mineral Exploration Techniques (3)L</u>
GEOL 4370	Global Change (3)
GEOL 4520	Petroleum Geology (3)L
GEOL 4830	Remote Sensing and Geological Information Systems (3)L
GEOL 4890	Basin Analysis (3)L
<u>GEOG 2250</u>	<u>Introduction to Geographic Information Systems (3)L</u>
GEOL 4910	Advanced Field Mapping (3)

Any List A or P not already taken, or any advanced level Geological Sciences, Physics or Mathematics course(s) approved by department.

List P Electives: Honours students are required to complete a minimum of 6 credit hours; Major students must complete a minimum of 3 credit hours from the following courses:

CHEM 2290	Chemical Energetics and Dynamics: Macroscopic Descriptions (3)L
MECH 2262	Fundamentals of Fluid Mechanics (3)L
PHYS 2610	Circuit Theory and Introductory Electronics (3)L
PHYS 2650	Classical Mechanics 1 (3)
PHYS 3630	Electro - and Magnetostatic Theory (3)
PHYS 3670	Classical Thermodynamics (3)

Or alternate physical science course(s) approved by department.

Faculty of Human Ecology

Modification:

HMEC 4090 Practicum in Human Ecology Cr.Hrs. 6

(formerly 028.409) This is a partnership among the university, field supervisor, and the student. It provides an opportunity for students to work in a supervised setting (e.g., health, social services or business) with health professionals as field supervisors. Students also have in-class experiences and assignments with an academic instructor. Prerequisites: 84 credit hours in the Human Ecology General or Interdisciplinary Health program and consent of instructor. Application required. Limited enrolment.

NET CHANGE IN CREDIT HOURS: 0

Human Nutritional Sciences

Modifications:

HNSC 4120 Senior Thesis Cr.Hrs. 3

(formerly 030.412) The preparation and presentation of a report based on a survey of the literature or on a laboratory investigation of an approved topic. Prerequisites: Students must be registered in their final year of Human Nutritional Sciences program or the Minor in Human Nutrition and Metabolism. Application required. Enrolment limited. Not to be held with HNSC 4122 or HNSC 4600.

HNSC 4122 Research Project in Human Nutritional Sciences Cr.Hrs. 6

A research project in any aspect of human nutritional sciences, chosen in consultation with the supervising faculty member. A written report and a poster or oral presentation required at the end of the project. Prerequisites: Students must be registered in their final year of Human Nutritional Sciences program. Application required. Enrolment limited. May not be held with HNSC 4120 (030.412) or HNSC 4600.

NET CHANGE IN CREDIT HOURS: 0

Textile Sciences

Program modification:

4.12.1 Product Development Stream

CHEM 1000 Understanding the World through Chemistry (3)
or
CHEM 1300 University 1 Chemistry: Structure and Modelling in Chemistry (3)
ECON 1210 Introduction to Canadian Economic Issues and Policies (3)
ECON 1220 Introduction to Global and Environmental Economic Issues and Policies (3)
FMLY 1010 Human Development in the Family (3)
HMEC 2030 Human Ecology: Perspectives and Communication (3)
HMEC 2050 Introduction to Research in Human Ecology (3)
HMEC 3100 Communication for Professional Practice (3)
HNSC 1210 Nutrition for Health and Changing Lifestyles (3)
PERS 1200 Physical Activity, Health and Wellness (3)
PSYC 1200 Introduction to Psychology (6)
or
SOC 1200 Introduction to Sociology (6)
STAT 1000 Basic Statistical Analysis 1(3)
TXSC 1600 Textiles for Living (3)
TXSC 1610 Textiles, Products, and Consumers (3)
TXSC 2500 Preparation for Product Development (3)
TXSC 2600 Textiles for Apparel End Uses (3)
TXSC 2610 Textiles for Non Apparel End Uses (3)
TXSC 2620 Consumer and Organizational Behaviour toward Textile Products (3)
TXSC 2630 Pattern Development in an Industrial Environment (3)
TXSC3600 Global Apparel and Textiles Trade (3)
TXSC 3610 Product Standards and Specifications (3)
TXSC 3620 Evaluation of Textile Performance (3)
TXSC 3630 Line Planning and Visual Communication (3)
TXSC 3640 Pattern Development in a Computer Aided Design Environment (3)
TXSC 3650 Production of Textile Products (3)
~~TXSC 4600 Information Age and the Textiles Supply Chain (3)~~
TXSC 4610 Integrative Project (6)
TXSC 4620 Colour Management (3)
TXSC 4630 Quality Assurance Systems (3)
Department Electives (90)
Free Electives ~~(24)~~ **(27)**

Interdisciplinary Health Program

Program modification:

<u>Health Sciences Minor Proposed Requirements:</u>	Credit Hrs.
HEAL 2600 Integration of Health Determinants of Individuals	3
HEAL 3600 Integration of Health Determinants for Communities	3
HEAL 4600 Integration of Health Determinants for Canada and the World	3
6 credit hours of science orientation courses at the 3000 or 4000 level*	
3 credit hours of social science orientation courses at the 3000 or 4000 level*	
Total: 18 credit hours	

<u>Health Studies Minor Proposed Requirements:</u>	Credit Hrs.
HEAL 2600 Integration of Health Determinants of Individuals	3
HEAL 3600 Integration of Health Determinants for Communities	3
HEAL 4600 Integration of Health Determinants for Canada and the World	3
6 credit hours of social science orientation courses at the 3000 or 4000 level*	
3 credit hours of science orientation courses at the 3000 or 4000 level*	
Total: 18 credit hours	

* courses from the approved program electives list for the Interdisciplinary Health Program listed online at:
http://umanitoba.ca/faculties/human_ecology

Faculty of Kinesiology and Recreation Management

Deletions:

PHED 2320 Human Anatomy Cr.Hrs. 3	-3
PHED 2330 Biomechanics Cr.Hrs. 3	-3
PHED 2540 Psychology of Sport and Physical Activity Cr.Hrs. 3	-3
PHED 3160 Pathology and Sports Medicine Cr.Hrs. 3	-3
PHED 3450 Motor Learning Cr.Hrs. 3	-3
PHED 3470 Exercise Physiology Cr.Hrs. 3	-3
PHED 3512 Principles of Fitness Training Cr.Hrs. 3	-3
PHED 3520 Coaching the High Performance Athlete A Cr.Hrs. 3	-3
PHED 3530 Coaching the High Performance Athlete B Cr.Hrs. 3	-3
PHED 4540 Advanced Topics in Sport Psychology Cr.Hrs. 3	-3
PHED 3740 Resistance Training and Conditioning Cr.Hrs. 3	-3
KIN 2400 Coaching Theory and Practice Cr.Hrs. 3	-3
KIN 2402 Advanced Coaching Theory and Practice Cr.Hrs. 3	-3
KIN 2740 Fitness Theory and Practice Cr.Hrs. 3	-3
KIN 3750 Lifestyle Activities Cr.Hrs. 3	-3
REC 3750 Lifestyle Activities Cr.Hrs. 3	-3
KIN 4710/REC 4710 Outdoor Education Cr.Hrs. 3	-3
KIN 4720/PHED 4720 Wilderness Adventures Cr.Hrs. 3	-3
KIN 3340/REC 3340 Philosophy of Physical Activity and Leisure Cr.Hrs. 3	-3
KIN 3350/REC 3350 Introduction to Research Cr.Hrs. 3	-3
KIN 3170/PHED 3170 Canadian Sport History Cr.Hrs. 3	-3
KIN 4630/REC 4630 Supervised Fieldwork Experience Cr.Hrs. 12	-12
KIN 3830/PHED 3830/REC 3830 Wilderness Leadership Cr.Hrs. 3	-3

Introductions:

PERS 3340 Philosophy of Physical Activity and Leisure Cr.Hrs. 3 +3
Issues in sport, physical education and recreation will be examined from a philosophical perspective. May not be held for credit with KIN 3340, REC 3340 or PHED 2340 or 057.234. Prerequisite: PERS 2100 (C).

PERS 3350 Introduction to Research Cr.Hrs. 3 +3
Students will become familiar with the basic principles and methods of research in the biological, life and social sciences. Students will have the conceptual foundations and practical skills needed to locate, understand, and evaluate primary research publications. May not hold for credit with KIN 3350, REC 3350 or REC 2010 (123.201). Prerequisite: STAT 1000 or STAT 1001 (005.100).

PERS 3170 Canadian Sport History Cr.Hrs. 3 +3
The course will emphasize the rise of modern sport in Canada and will reflect on the ways in which social change has influenced sport and physical activity. This course provides an overview of issues and topics related to the development of modern sports in Canada. Using the concepts of class, gender, race and ethnic identity as interpretative tools, the course will examine: Physical activities and games of First Nations; sport and recreation in New France and British North America; sports in post-Confederation Canada; and developments in the 20th and 21st centuries. May not be held for credit with KIN 3170, PHED 3170 or PHED 3070 (057.307).

PERS 4630 Supervised Fieldwork Experience Cr.Hrs. 12 +12
The fieldwork practicum is a professionally supervised field experience that provides an opportunity to apply knowledge gained in academic courses, and exposure to new concepts or professional practice in the fields of physical activity, health and wellness, or leisure. Students are placed for a 13-week period of full-time work within a suitable agency. May not be held for credit with PHED 4620 (057.462) or REC 3080 (123.308) or REC 4630. Prerequisite: Successful completion of 90 credit hours of course work in the BKin degree program and a minimum DGPA of 2.5.

PERS 3102 Aboriginal Song and Dance Cr.Hrs. 3 +3
An introduction to a variety of traditional and culturally relevant Aboriginal songs and dances representative of Canada's Aboriginal peoples, including First Nations, Métis and Inuit, taught using western and traditional teaching styles with an emphasis on hands-on learning. A fieldwork fee is attached to the course.

Modifications:

KIN 2320 Human Anatomy Cr.Hrs. 3
(Lab required) Structure of the skeletal, articular, and muscular systems of the human body. May not be held for credit with PHED 2320 (057.232), REHB 1480 (068.148), REHB 1490 (068.149), or REHB 1500 (068.150). Prerequisite: {BIOL 1030 (C)} or {BIOL 1000 and BIOL 1010 (C+)} or [BIOL 1412 (C)] or equivalent.

KIN 3470 Exercise Physiology Cr.Hrs. 3
(Lab required) Physiological and functional responses to acute and chronic exercise, focusing on the cardiovascular, respiratory and neuromuscular systems. May not be held for credit with PHED 3470 or PHED 3430 (057.343). Prerequisite: [BIOL 2420] or [BIOL 1412 (C)] or equivalent. Requires a paid facility use pass.

KIN 3740 Resistance Training and Conditioning Cr.Hrs. 3

Development of theoretical and practical knowledge of strength training and conditioning for programming over the entire healthy population from inactive sedentary individuals to elite athletes. May not hold for credit with PHED 2620 (057.262) or PHED 3740. Prerequisites: [KIN 2320 (C) or equivalent] and [KIN 3470 (C) or equivalent]. Co-requisite: [KIN 3512 (C) or equivalent]. Requires a paid facility use pass.

KIN 3912 Athletic Therapy Practicum Cr.Hrs. 4 – immunization?

To provide clinical and on-field internship experiences on campus and in the community for prospective Athletic Therapy candidates. May not be held for credit with KIN 3910 or PHED 3910 (057.391). Evaluated pass-fail. Prerequisites: [KIN 2750 (C)] and [KIN 2320 (C) or equivalent] and KIN 3200 (C).

KIN 3914 Clinical Block Placement (2)

Clinical internship experience on campus and in the community for prospective Athletic Therapy candidates. Evaluated pass-fail. May not be held for credit with KIN 3910 or PHED 3910 (057.310). Prerequisite KIN 3912.

KIN 4460 Fitness Appraisal and Lifestyle Counselling Cr.Hrs. 3

Theoretical knowledge and practical training related to physical activity, fitness and lifestyle appraisal and counseling. Prepares students to certify as “Certified Personal Trainer (CPT) (Canadian Society for Exercise Physiology).” B.Kin. students who wish to prepare for the Certified Exercise Physiologist (CEP)(Canadian Society for Exercise Physiology) Certification should consult the Undergraduate Program Administrator for information. May not be held for credit with PHED 4460 (057.446). Prerequisite: [KIN 3470 (C) or equivalent]. Pre or Co-requisites: [PERS 1200 (C) or equivalent] and [KIN 3512 (C) or equivalent]. Requires a paid facility use pass.

KIN 4500 Physical Activity and Aging Cr.Hrs. 3

The study of the aging process and the effects of exercise and lifestyle factors on the health and fitness of the aging adult. This is an Option in Aging course. May not be held for credit with PHED 4500 (057.450). Prerequisite: [KIN 3512 (C) or equivalent] or permission of the instructor.

KIN 4560 Advanced Fitness Appraisal and Lifestyle Counselling Cr.Hrs. 3

(Lab required) Advanced theoretical knowledge and experiential learning related to physical activity, fitness and lifestyle assessment, counseling and exercise prescription for apparently healthy and clinic populations. Prepares students for Canadian Society for Exercise Physiology “Certified Exercise Physiologist” (CSEP-CEP) exams. Prerequisites: [KIN 4460 (C) or equivalent] and [KIN 3512 (C) or equivalent]. Requires a paid facility use pass.

KIN 4910 Athletic Therapy Practicum Cr.Hrs. 6.

To provide clinical and on-field internship experiences on campus and in the community for prospective Athletic Therapy candidates. May not be held for credit with PHED 4910 (057.491). Evaluated pass-fail. Prerequisite: [KIN 3914 or equivalent] and [KIN 3400 (C)] and [KIN 3320 (C) or equivalent].

NET CHANGE IN CREDIT HOURS: -54

Program modifications:

The specific changes to each degree program are summarized in the following program charts using the footnotes indicated:

Course Number change ●

Course Prefix change ■

Course Number and Prefix change □

Program change ▲

Deletions are indicated by strike-through and additions are indicated by underlining.

Program Requirements: Bachelor of Kinesiology

Year 1 - University 1: 30 credit hours

Course No.	Credit Hours
BIOL 1XXX BIOL 1020 Biology 1: Principles and Themes and BIOL 1030 Biology 2: Biological Diversity, Function and Interaction (with a minimum grade of "C" in each) <u>or</u> BIOL 1000 Biology: Foundations of Life and BIOL 1010 Biological Diversity and Interaction (with a minimum grade of "C+")	6
PERS 1200 Physical Activity, Health and Wellness	3
PERS 1400 Concepts of Recreation and Leisure	3
PERS 1500 Foundations of Physical Education and Kinesiology	3
PSYC 1200 Introduction to Psychology	6
W Written English Requirement	3
STAT 1000 Basic Statistical Analysis 1	3
Electives	3

Year 2: 30 credit hours

Course No.	Credit Hours
BIOL 2410 Human Physiology 1	3
BIOL 2420 Human Physiology 2	3
PERS 2100 Introduction to Professional Practice	3
PERS 2200 Program Planning Principles	3
<u>PERS 3350 Introduction to Research</u>	<u>3 new ■ ▲</u>
KIN 2320 Human Anatomy	3
KIN 2330 Biomechanics	3
ABIZ 1000 Introduction to Agribusiness Management	3 delete ▲
Electives	9

Year 3: 30 credit hours

Course No.	Credit Hours
PERS 3100 Inclusive Physical Activity and Leisure	3
KIN 3340 Philosophy of Physical Activity and Leisure	3 delete
<u>PERS 3340 Philosophy of Physical Activity and Leisure</u>	<u>3 new ■</u>
PERS 3460 Sociology of Physical Activity and Leisure	3
KIN 3350 Introduction to Research	3 delete
KIN 3470 Exercise Physiology	3
KIN 3090 Principles of Fitness Training	3 delete
<u>KIN 3512 Principles of Fitness Training</u>	<u>3 new ■</u>
KIN 3740 Resistance Training and Conditioning	3
<u>Electives</u>	<u>9 12 new ▲</u>

Year 4: 30 credit hours

Course No.	Credit Hours
PERS 4100 Current Issues	3
KIN 3450 Motor Learning	3
KIN 4500 Physical Activity and Aging	3
Electives	21

Program Requirements: Bachelor of Kinesiology - Athletic Therapy

Year 1 - University 1: 30 credit hours

Course No.	Credit Hours
BIOL 1XXX BIOL 1020 Biology 1: Principles and Themes 6 and BIOL 1030 Biology 2: Biological Diversity, Function and Interaction (with a minimum grade of "C" in each) or BIOL 1000 Biology: Foundations of Life and BIOL 1010 Biological Diversity and Interaction (with a minimum grade of "C+")	
PERS 1200 Physical Activity, Health and Wellness	3
PERS 1400 Concepts of Recreation and Leisure	3
PERS 1500 Foundations of Physical Education and Kinesiology	3
PSYC 1200 Introduction to Psychology	6
W Written English Requirement	3
STAT 1000 Basic Statistical Analysis 1 Electives	3

Year 2: 33 credit hours

Course No.	Credit Hours
BIOL 2410 Human Physiology 1	3
BIOL 2420 Human Physiology 2	3
PERS 2100 Introduction to Professional Practice	3
PERS 2200 Program Planning Principles	3
PERS 3350 <u>Introduction to Research</u>	3 new ▲
KIN 2320 Human Anatomy	3
KIN 2330 Biomechanics	3
KIN 2750 Athletic Therapy Skills	3
KIN 3200 Basic Trauma and Life Support	3
KIN 3320 Advanced Human Anatomy	3
HNSC 1210 <u>Nutrition for Health and Changing Lifestyles</u>	3 new ▲
KIN 3840 <u>Athletic Therapy Practicum</u>	6 delete

Year 3: 36 ~~33~~ credit hours new ▲

Course No.	Credit Hours
PERS 3100 Inclusive Physical Activity and Leisure	3
KIN 3340 Philosophy of Physical Activity and Leisure	3 delete
PERS 3340 <u>Philosophy of Physical Activity and Leisure</u>	3 new ■
KIN 3160 Pathology and Sport Medicine	3
KIN 3300 Functional Assessment and Restoration	6 delete
KIN 3330 <u>Functional Assessment and Restoration A</u>	3 new ■
KIN 3332 <u>Functional Assessment and Restoration B</u>	3 new ■
KIN 3400 Therapeutic Modalities	3
KIN 3470 Exercise Physiology	3
KIN 3090 Principles of Fitness Training	3 delete
KIN 3512 <u>Principles of Fitness Training</u>	3 new ■
KIN 3740 Resistance Training and Conditioning	3
KIN 3360 Introduction to Research	3 delete
KIN 3912 <u>Athletic Therapy Practicum</u>	4 new ■
KIN 3914 <u>Clinical Block Placement</u>	2 new ■
KIN 3840 Athletic Therapy Practicum	6 delete

Year 4: 33 ~~30~~ credit hours new ▲

Course No.	Credit Hours
PERS 4100 Current Issues	3
KIN 2540 <u>Psychology of Sport and Physical Activity or</u> PSYC 3860 Sport Psychology	3 new ▲
KIN 3450 Motor Learning	3
KIN 4180 Advanced Pathology and Sport Medicine	3
KIN 4330 Advanced Biomechanics	3
KIN 4400 Therapeutic Exercise Rehabilitation	3
KIN 4500 Physical Activity and Aging	3
HNSC 1210 Nutrition for Health and Changing Lifestyles	3 delete
ABIZ 1000 <u>Introduction to Agribusiness Management</u>	3 delete ▲
KIN 4910 <u>Athletic Therapy Practicum</u> <u>Electives</u>	6 3 new ▲

Program Requirements: Bachelor of Physical Education

Year 1 – University 1: 30 credit hours

Course No.		Credit Hours
BIOL 1410	Anatomy of the Human Body	3
BIOL 1412	Physiology of the Human Body	3
ENGL 1200	Representative Literary Works or ENGL 1300 Literature Since 1900 or ENGL 1310 Literary Topics 1 and ENGL 1340 Introduction to Literary Analysis)	6
PERS 1500	Foundations of Physical Education and Kinesiology	3
PSYC 1200	Introduction to Psychology	6
M	Mathematics or Statistics Requirement	3
	Teachable Minor	6

Year 2: 36 credit hours

Course No.		Credit Hours
PERS 1400	Concepts of Recreation and Leisure	3
PERS 2100	Introduction to Professional Practice	3
PERS 2200	Program Planning Principles	3
PHED 2320	Human Anatomy	3 delete
KIN 2320	Human Anatomy	3 new ■
PHED 2330	Biomechanics	3 delete
KIN 2330	Biomechanics	3 new ■
PHED 2550	Growth and Motor Development	3
Required Experiential Learning Courses:		
PHED 2710	Human Movement Principles	3
PHED 2720	Developmental Games and Activities	3
PHED 2730	Gymnastics, Dance and Rhythmic Activities	3
PHED 2740	Fitness Theory and Practice	3
	Teachable Minor	6

Year 3: 36 credit hours

Course No.		Credit Hours
PERS 3100	Inclusive Physical Activity and Leisure	3
PERS 3460	Sociology of Physical Activity and Leisure	3
PHED 3360	Culturally Relevant Physical Education and Health	3
PHED 3450	Motor Learning	3 delete
KIN 3450	Motor Learning	3 new ■
PHED 3470	Exercise Physiology	3 delete
KIN 3470	Exercise Physiology	3 new ■
PHED 3090	Principles of Fitness Training	3 delete
KIN 3512	Principles of Fitness Training	3 new ■
Required Experiential Learning Course:		
PHED 3710	Active Health and Human Potential	3
Faculty Electives		
	Must include 2 or 3 of the following	9
Experiential Learning Courses (ELCs):		
PHED 3720	Coaching Theory and Practice (3) delete	
PHED 3730	Advanced Coaching Theory and Practice (3) delete	
PHED 2400	Coaching Theory and Practice (3) new ■	
PHED 2402	Advanced Coaching Theory and Practice (3) new ■	
PHED 3740	Resistance Training and Conditioning (3)	
PHED 3750	Lifestyle Activities (3)	
PHED 3760	Diverse Populations Mentorship (3)	
PHED 3770	Aboriginal Games and Activities (3)	
PHED 4710	Outdoor Education (3)	
REC 4720	Wilderness Adventures (3) new ■	
	Teachable Minor	6

Program Requirements: Bachelor of Recreation Management and Community Development

Year 1 - University 1: 30 credit hours

Course No.	Credit Hours
PERS 1200 Physical Activity, Health and Wellness	3
PERS 1300 Introduction to Leisure Travel	3
PERS 1400 Concepts of Recreation and Leisure	3
PERS 1500 Foundations of Physical Education and Kinesiology	3
PSYC 1200 Introduction to Psychology	6
W Written English Requirement	3
STAT 1000 Introduction to Statistical Analysis 1	3
Electives	6

Year 2: 30 credit hours

Course No.	Credit Hours
SOC 1200 Introduction to Sociology	6
PERS 2100 Introduction to Professional Practice	3
PERS 2200 Program Planning Principles	3
PERS 3350 <u>Introduction to Research</u>	3 new ■ ▲
REC 2400 Management and Marketing of Leisure Services	3
REC 3090 Foundations of Sustainable Nature-Based Tourism	3
REC 3850 The Planning of Recreation Areas and Facilities	3
Electives	9 6 new ▲

Year 3: 30 credit hours

Course No.	Credit Hours
PERS 3100 Inclusive Physical Activity and Leisure	3
REC 3340 Philosophy of Physical Activity and Leisure	3 delete
PERS 3340 Philosophy of Physical Activity and Leisure	3 new ■
PERS 3460 Sociology of Physical Activity and Leisure	3
REC 3350 Introduction to Research	3 delete
REC 3200 Advanced Program Planning and Research	3
REC 4070 Community Development and the Leisure Delivery System	3
REC 4XXX Advanced Recreation Electives	6
Electives	6 9 new ▲

Year 4: 30 credit hours

Course No.	Credit Hours
PERS 4100 Current Issues	3
REC 4XXX Advanced Recreation Electives	6
Electives	21

Asper School of Business - Faculty of Management

Marketing Department

Modification:

MKT 4210 Marketing Management Cr.Hrs. 3

(formerly 118.421) An examination of strategies and tactics marketing managers use for products and services at various stages in the product life cycle. Uses qualitative and quantitative analyses to develop critical thinking essential for making marketing decisions. Can only be taken in final year of program. Prerequisite: [MKT 3220 (118.322)(D) or MKT 3230 (118.323)(D)], and [one 3000 or 4000 level MKT course (D)] and [ACC 1110 (009.111)(D)]. Pre- or Co-requisite: Either MKT 3220 (118.322)(D) or MKT 3230 (118.323)(D), but not both.

NET CHANGE IN CREDIT HOURS: 0

Interdisciplinary Management Department

Deletions:

IDM 2980 Co-op Work Term 1 Cr. Hrs. 0	-0
IDM 3980 Co-op Work Term 2 Cr. Hrs. 0	-0
IDM 4980 Co-op Work Term 3 Cr.Hrs. 0	-0

Introductions:

IDM 2980 Co-op Work Term 1 Cr. Hrs. 1	+1
IDM 3980 Co-op Work Term 2 Cr. Hrs. 1	+1
IDM 4980 Co-op Work Term 3 Cr.Hrs. 1	+1

NET CHANGE IN CREDIT HOURS: +3

Department of Supply Chain Management

Introduction:

SCM 2240 Purchasing and Supply Management Cr.Hrs. 3 +3
Purchasing and supply management is an increasingly important element of corporate strategy as global supply chains become longer and more complex. In this course, students will learn about a major paradigm shift in purchasing, from a clerical activity to a strategic corporate function. The course covers strategic supply management, inter-organizational relationships, product and service specifications, price and cost analysis, negotiation, quality management, supply chain information technology, and other important purchasing topics, from a supply chain management perspective.

NET CHANGE IN CREDIT HOURS: +3

Faculty of Pharmacy

Deletions:

PHRM 3210 Principles of Professional Practice Cr. Hrs. 3	-3
PHRM 3510 Principles of Scientific Literature Cr.Hrs. 2	-2

Introductions:

PHRM 3230 Principles of Professional Practice Cr.Hrs. 2 +2
This course offers the opportunity to explore professionalism, ethics and socio-economic aspects of the health care system. May not be held with PHRM 3210.

PHRM 3520 Principles of Scientific Literature Cr.Hrs. 4 +4
Primary literature is critically analyzed. Discussion of how study results impact on treatment strategies are emphasized. May not be held with PHRM 3510.

NET CHANGE IN CREDIT HOURS: +1

Program modifications to third year:

Third Year (for 2012-2013)

Dept. Name	Dept. Code	Course No.	Credit Hours
Pharmacy	PHRM	3100	2
Pharmacy	PHRM	3210	3
<i>Pharmacy</i>	<i>PHRM</i>	3220 <i>3230</i>	2
Pharmacy	PHRM	3220	3
Pharmacy	PHRM	3310	10
Pharmacy	PHRM	3320	3
Pharmacy	PHRM	3430	3
Pharmacy	PHRM	3500	4
Pharmacy	PHRM	3510	2
<i>Pharmacy</i>	<i>PHRM</i>	3520 <i>3520</i>	4
Pharmacy	PHRM	3640	3
Pharmacy	PHRM	3700	4
Total Credit Hours for Third Year:			37
Total Credit Hours for Third Year:			38

Program modification to first year:

Revisions to: First Year B.Sc. Pharmacy Program

Key: New Material
~~Deleted Material~~

Course No.		Credit Hours
First Year		
CHEM 2210	Organic Chemistry	3
CHEM 2360	Intermediate Biochemistry	3
CHEM 2370	Intermediate Biochemistry	3
PHRM 1000	Introduction to Pharmacy	1
PHRM 1110	Pharmacy Skills Laboratory (PSL-1)	3
PHRM 1300	Fundamentals of Pharmaceutics	2
PHRM 1430	Applied Pathophysiology for Pharmacy Students	3
PHRM 1700	Structured Practical Experiential Program I (SPEP-1)	1
MBIO 2100	General Microbiology (or equivalent MBIO 1010)	3
<u>MBIO 1010</u>	<u>General Microbiology</u>	<u>3</u>
ANAT 1030	Human Anatomy	3
PHGY 1030	Fundamentals of Medical Physiology	6
Total credit hours		31

Faculty of Science

Proposed Honours Regulations:

3.5 Honours Academic Regulations

Honours Entrance Requirements

To enter an Honours degree program, a student must have completed at least 24 credit hours, have a minimum DGPA of 3.00, and a grade of "B" or better in at least one introductory course designated by the department(s).

Another way to gain entry to the many Faculty of Science Honours programs is through the **Second Year Entry Route**. If a student finds himself/herself ineligible to enter a desired Honours program following the completion of 24 or more credit hours, eligibility to enter Honours via the second year entry route can be established by taking a minimum of 18 credit hours over consecutive Fall and Winter Terms, with a minimum of 9 credit hours in each term. The 18 credit hours chosen must be applicable to the program the student wishes to enter, and the student must achieve at least a "B" average on those 18 credit hours. If a student chooses to attempt more than 18 credit hours over the consecutive Fall and Winter terms, the best applicable 18 credit hours will be used to calculate whether or not the "B" average has been achieved for the purpose of assessing eligibility for entrance to the Honours program of choice. Note: Students wishing to enter an Honours program using the Second Year Entry Route must also have an overall DGPA of at least 3.00.

Honours Continuation and Graduation Requirements

A minimum Degree Grade Point Average of 3.00 is required at each point of assessment in order to continue in an Honours program.

Students must complete a minimum of 9 credit hours in each Fall and Winter Term (or equivalent for students in the Co-operative option) to remain in Good Academic standing in the Honours program. Students failing to do so will be required to withdraw from the Honours program and may be eligible to pursue the B. Sc. Major program or the B. Sc. General degree program.

Students who do not meet the minimum requirement will be required to withdraw from the Honours program.

Students who accumulate more than 15 credit hours of failed courses after entering the Honours degree program (regardless of the origin of the grade or if the course has been repeated) will be required to withdraw from the program. Students required to withdraw from the Honours program may be eligible to pursue the B. Sc. Major program or the B. Sc. General degree program.

To qualify for the degree, Bachelor of Science (Honours), a student must complete a minimum of 120 credit hours or more with a minimum grade of C on all courses contributing to the 120 credit hours that satisfy the program requirements. Additionally, students must have a minimum degree grade point average of 3.00.

The following Honours degree programs will be impacted by this change:

- Actuarial Mathematics
- Biochemistry Joint Honours (including co-op)
- Biological Sciences Honours (including co-op)
- Biotechnology Honours (including co-op)
- Chemistry Honours (including co-op)
- Computer Science
- Genetics Honours (including co-op)
- Mathematics Honours
- Mathematics – Physics Joint Honours
- Microbiology Honours (including co-op)
- Statistics Honours
- Statistics – Actuarial Mathematics Joint Honours

Proposed General Degree Introductory Regulations:

Introductory Level Science courses (24 credit hours): Students must select 6 credit hours from each of 3 areas listed below (18 credit hours) in Group A. Additionally, students must select 6 credit hours from any courses listed in Group A and/or Group B.

NOTE: A maximum of 6 credit hours may be selected from any single subject area for use toward the 24 credit hours of introductory course requirements.

Group A

- Astronomy: six credit hours chosen from PHYS 1810, PHYS 1820, PHYS 1830
- Biology: BIOL 1020 and BIOL 1030
- Chemistry: CHEM 1300 and CHEM 1310
- Computer Science: COMP 1010 and COMP 1020
- Mathematics: six credit hours chosen from MATH 1200, MATH 1300 (or equivalent), MATH 1500, (or equivalent), MATH 1700 (or equivalent), MATH 1690 (6).
- Physics: PHYS 1020 or PHYS 1050; and PHYS 1030 or PHYS 1070
- Statistics: STAT 1000 and STAT 2000

Group B

- BIOL 1410, COMP 1012², MATH 1210¹, MBIO 1010, MBIO 1220, FORS 2000, STAT 2220³

Notes:

1. MATH 1210 may not be held for credit with MATH 1200 or MATH 1300.
2. COMP 1012 may not be held for credit with COMP 1010.
3. STAT 2220 may not to be held for credit with STAT 1000

Actuarial Mathematics Program

Program Modifications:

Proposed Program Requirements:

4.1.1 Program Information

This is an interdisciplinary program leading to a Bachelor of Science (Honours) degree in Actuarial Mathematics offered in collaboration with the Warren Centre for Actuarial Studies and Research of the I.H. Asper School of Business. The program covers mathematical, statistical, financial and economic concepts required to develop skills in the modelling and management of financial risk and contingent events. In the Faculty of Science the program has a greater emphasis on the mathematical and statistical courses than does the Actuarial Mathematics program offered by the I.H. Asper School of Business.

The Warren Centre, with the department of Statistics, offers a joint Honours program (see Section 4.13.3).

To enter the program, a student must have a minimum grade of "B" in one of the following courses: a three (3) credit hour Written English (W) course, MATH 1300, MATH 1500, MATH 1700, STAT 1000, or **both of ECON 1010 and ECON 1020**. All of these courses are program requirements and students are strongly urged to take them in the first year.

To continue in the Honours program, a student must have a Degree Grade Point Average of 3.00 or better.

To graduate with the B. Sc. Honours degree, a student must achieve a minimum DGPA of 3.00 and a minimum grade of "C+" in each of the Honours Program Specific courses (see below), and a minimum grade of "C" on all remaining courses that contribute to the 120 credit hours of the degree.

Honours Program Specific Courses

Students must achieve a minimum grade of "C+" in each of the following:

ACT 2020, ACT 2120, ACT 2210, ACT 3130, ACT 3230, ACT 3530, ACT 4000, ACT 4060, ACT 4140, ACT 4340

In order to receive course credit and examination exemptions from future Society of Actuaries (SoA) and VEE courses, students must obtain a grade of "B" in the following courses: **both of ECON 1010 and ECON 1020**, ACC 1100, FIN 2200, STAT 3470, and STAT 3490. Contact the Warren Centre for Actuarial Studies and Research for further information.

4.1.2 Actuarial Mathematics

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
HONOURS ACTUARIAL 120 CREDIT HOURS			
<u>ECON 1010⁶, ECON 1020⁶</u>	ACT 2020, ACT 2120	ACT 2210, ACT 3130, ACT 3230, ACT 3530, ACT 4000	ACT 4060, ACT 4140, ACT 4340
MATH 1500 ¹ , MATH 1700 ¹ , MATH 1300 ¹	STAT 2400, STAT 3400	MATH 2300 ⁴	STAT 3470 ⁶ , STAT 3490 ^{3,6}
STAT 1000, STAT 2000	ACC 1100 ^{2,6} , FIN 2200 ^{2,6}	STAT 3050, STAT 3800	MSCI 2150 ⁵
<u>3 credit hour "W" requirement</u>	MATH 2720 ¹ , MATH 2730 ¹		
	COMP 1260 ⁵		
<u>6 credit hours</u> of electives ⁷	3 credit hours of approved electives	6 credit hours of approved electives ⁷	12 credit hours of approved electives ⁷
30 Hours	30 Hours	30 Hours	30 Hours

Biochemistry Program

Program Modifications:

Proposed Honours Degree Regulations (incl. Co-op):

Honours Program Specific Courses:

CHEM: 2210, 2220, 2280, 2360 (MBIO 2360), 2370 (MBIO 2370), 2XY0, 2470, 3570, 4360, 4370, 4620, 4630, 4700
 MBIO: 1010, 2020, 3410, 3450, 3460, 4540

Chemistry and Microbiology Option Courses for Biochemistry Honours Students:

CHEM: 2290, 3AB0, 3360, 3370, 3390, 3490, 3580, 4570, 4580, 4590, 4600, 4640, 4650, 4670, 4680, 4690, 4710 (6)
 MBIO: 3000, 3010, 3030, 3280, 3430, 3470, 4010, 4020, 4410, 4440, 4480, 4520, 4530, 4570, 4580, 4600, 4610, 4670 (or 4672)

Option courses no longer offered that may be used if taken prior to their deletion in 2010: CHEM 3380, MBIO 2280, MBIO 3440, MBIO 3480, MBIO 4320, MBIO 4470, and MBIO 4510. NOTE: Several of these courses may not be held with current course offerings found on the above option lists. Please refer to the calendar descriptions for more information about specific courses.

Other options may be considered and approved by the program advisor.

4.2.2 Biochemistry Programs (offered Jointly by the Departments of Chemistry and Microbiology)			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
JOINT HONOURS 120 CREDIT HOURS			
CHEM 1300, CHEM 1310 BIOL 1020, BIOL 1030 PHYS 1050 (or PHYS 1020), PHYS 1070 (or PHYS 1030) MATH 1500 ¹ , MATH 1700 ¹	CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2360, CHEM 2370, <u>CHEM 2400</u> , CHEM 2470 MBIO 1010, MBIO 2020	CHEM 3570 MBIO 3410, MBIO 3450, MBIO 3460	CHEM 4360, CHEM 4370, CHEM 4620, CHEM 4630, CHEM 4700 MBIO 4540
In University 1 or Year 2 the following must be completed: 6 credit hours from the Faculty of Arts including the University Written English "W" requirement ² 3 credit hours chosen from COMP, MATH, or STAT ⁵		18 credit hours selected from the list of Microbiology and Chemistry optional courses (listed above). 12 credit hours selected from the Faculty of Science ⁵	
30 Hours	30 Hours	30 Hours	30 Hours
JOINT HONOURS COOPERATIVE OPTION³ 120 CREDIT HOURS			
CHEM 1300, CHEM 1310 BIOL 1020, BIOL 1030 PHYS 1050 (or PHYS 1020), PHYS 1070 (or PHYS 1030) MATH 1500 ¹ , MATH 1700 ¹	CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2360, CHEM 2370, <u>CHEM 2400</u> , CHEM 2470 MBIO 1010, MBIO 2020	CHEM 3570 MBIO 3410, MBIO 3450, MBIO 3460	CHEM 4360, CHEM 4370, CHEM 4620, CHEM 4630 MBIO 4540
In University 1 or Year 2 the following must be completed: 6 credit hours from the Faculty of Arts including the University Written English "W" requirement ² 3 credit hours chosen from COMP, MATH, or STAT ⁵		21 credit hours selected from the list of Microbiology and Chemistry Optional courses listed above. 12 credit hours selected from the Faculty of Science ⁵	
30 Hours	30 Hours	30 Hours	30 Hours
		Work Terms: MBIO 3980, MBIO 3990, MBIO 4980 and/or MBIO 4990	
30 Hours	30 Hours	30 Hours	30 Hours

Proposed Major Degree Regulations (incl. Co-op):

Major Program Specific Courses:

CHEM: 2210, 2220, 2280, 2360 (MBIO 2360), 2370 (MBIO 2370), **2400**, 2470, 3570, 4630 and whichever one of 4620, 4360, 4370 is selected
 MBIO: 1010, 2020, 3410, and whichever one of 3450, 3460 or 4540 is selected.

JOINT FOUR YEAR MAJOR (Including Cooperative Option)^{3,4} 120 CREDIT HOURS

CHEM 1300, CHEM 1310	CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2360, CHEM 2370, CHEM 2400 , CHEM 2470	CHEM 3570	CHEM 4630
BIOL 1020, BIOL 1030	MBIO 1010, MBIO 2020	MBIO 3410	One of: CHEM 4620, CHEM 4360, CHEM 4370
PHYS 1050 (or 1020), PHYS 1070 (or PHYS 1030)		One of: MBIO 3450, MBIO 3460, MBIO 4540	
MATH 1500 ¹ , MATH 1700 ¹			
In University 1 or Year 2 the following must be completed:		24 credit hours of Microbiology and Chemistry (minimum 6 credit hours from each dept.). Of these 24 credit hours, at least 12 hours must be 4000 level courses.	
6 credit hours from the Faculty of Arts including the University Written English "W" requirement ²		21 credit hours of approved electives ⁵	
3 credit hours chosen from COMP, MATH, or STAT ⁵		Work Terms (if Co-op Selected):	
		MBIO 3980, MBIO 3990, MBIO 4980 and / or MBIO 4990	

Department of Biological Sciences

Deletions:

BIOL 2382 Toxicological Principles Cr.Hrs. 1.5	-1.5
BIOL 3330 Fungal Ecology Cr.Hrs. 3	-3
BIOL 3460 Environmental Physiology of Animals I Cr.Hrs. 3	-3
BIOL 3462 Environmental Physiology of Animals II Cr.Hrs. 3	-3
BIOL 4320 Ecological Methods Cr.Hrs. 3	-3
BIOL 4360 Models for Behavioural Ecology Cr.Hrs. 3	-3
BIOL 4880 Analysis of Ecological Problems Cr.Hrs. 3	-3

Introductions:

BIOL 3600 Biodiversity and Sustainability Cr.Hrs. 3 +3
 Anthropogenic drivers of change of many components of biological diversity; the resulting impacts on ecosystem capacity to provide on-going goods and services that are essential constituents of well-being and ultimately sustainability. Prerequisites: BIOL 2300 (C); or both BIOL 1030 (C) and BIOL 2390 (C).

BIOL 3350 Methods of Data Collection and Analysis in Ecology Cr.Hrs. 3 +3
 This course will consider methods of collection and analysis of ecological data, emphasizing experimental design of ecological studies, sampling, analysis of ecological data sets, and presentation techniques. Prerequisites: BIOL 2300 (C); and STAT 2000 or STAT 2001 (D); or consent of department.

BIOL 3340 Biology of Primitive Fungi and Allies Cr.Hrs. 3 +3
 (Lab required) Studies on the Biology of primitive fungi and slime moulds including their evolution, life histories, development, structure, taxonomy, biochemistry, and importance to humans. Environmental collection, baiting, isolation and axenic culturing stressed in laboratories. Prerequisite: BIOL 1010 (B); or BIOL 1030 (C); or BIOL 1031 (C).

BIOL 3470 Environmental Physiology of Animals 1 Cr.Hrs. 3 +3
(Lab required) This course is intended to acquaint students with some of the major environmental challenges encountered by animals and stresses the diversity of physiological solutions to these problems in aquatic and terrestrial organisms. Areas covered may include thermal biology, circulation, gas exchange and buoyancy regulation. Laboratories explore related subjects in various animals. This course may not be held for credit with BIOL 3462, the former ZOOL 3540, or the former 022.354. Prerequisite: BIOL 2200 (C) or BIOL 2210 (C) or consent of department.

BIOL 3472 Environmental Physiology of Animals 2 Cr.Hrs. 3 +3
(Lab required) This course is intended to acquaint students with the control and integration of organ systems and body functions of animals, and their biochemical and physiological adaptations to environmental perturbations. Areas covered may include neuroendocrinology, excretion, and water, salt, and acid-base balance. Laboratories explore related subjects in various animals. This course may not be held for credit with BIOL 3460, or the former ZOOL 3530, or the former 022.353. Prerequisites: BIOL 2200 (C) or BIOL 2210 (C) or consent of department.

Modification:

BIOL 2390 Introductory Ecology Cr.Hrs. 3
(formerly BOTN 2280, 001.228, ZOOL 2290, 022.229) The course involves a study of the interrelationships of living organisms (including human) with each other and with their environment. It is not normally acceptable as a prerequisite to other courses in ecology. Not to be held with BIOL 2300 (BOTN 2370, ZOOL 2370, 001.237, 022.237), BIOL 2301 (BOTN 2371, ZOOL 2371), or AGECE 2370 (065.237). Prerequisite: A grade of 'C' or better in one of BIOL 1010, BIOL 1030 (BIOL 1031) or 071.125.

NET CHANGE IN CREDIT HOURS: -4.5

Program Modifications:

Proposed:

III. Environmental and Integrative Physiology: The Environmental and Integrative Physiology theme will be of interest to a wide array of students interested in pursuing employment opportunities in the Environmental, Consulting, Pharmaceutical, Healthcare, and Professional job markets. Based on the suggested courses and sub themes within this program students will be able to graduate with an all inclusive degree or specialize in particular disciplines ranging from molecular physiology to whole organism physiology and eco/environmental physiology, a subject area that is at the interface between ecology and physiology. Students will be exposed to modern research techniques in lab classes and will be taught by instructors and faculty with active research programs within the Department of Biological Sciences.

Specific courses required for the Environmental and Integrative Physiology Theme in addition to the core course requirements: 6 Credit hours of Biochemistry CHEM 2770 (MBIO 2770) and CHEM 2780 (MBIO 2780); or CHEM 2210 and CHEM 2360 (MBIO 2360) and CHEM 2370 (MBIO 2370); *Plus: two of the following courses (one of which is already required in the four-year Biological Sciences Degree programs):* **BIOL 3470 Environmental Physiology of Animals 1 (3), BIOL 3472 Environmental Physiology of Animals 2 (3),** BIOL 3450 (BOTN 2020) Plant Physiology (3), BIOL 3452 (BOTN 3010) Environmental Physiology of Plants (3).

Program Chart Changes

All Biological Sciences Honours and Major degree program charts will have BIOL 3460 and BIO 3462 replaced by BIOL 3470 and BIOL 3472 respectively.

Biotechnology Program

Program Modifications:

Proposed Biotechnology Regulations:

Recommended General Electives if not required in Program stream:

All courses in above described Minors.

Appropriate pre-requisites must also be taken for all Electives.

BIOL 3200, BIOE 3530, ~~BIOL 4520~~, BIOL 1300 (BOTN 1010), BIOL 2242 (BOTN 2010), BIOL 2380 (BOTN/ZOOL 2180), BIOL 2260 (BOTN 2210), BIOL 2300 (BOTN/ZOOL 2370), BIOL 3550 (BOTN 3190), BIOL 3290 (BOTN 3280), BIOL 3500 (BOTN 3460), BIOL 4500 (BOTN 4180), BIOL 4550 (BOTN 4460), BIOL 2540 (ZOOL 2150), BIOL 3540 (ZOOL 3070), BIOL 4540 (ZOOL 4150); CHEM 4360, CHEM 4370, CHEM 4590, CHEM 4620, CHEM 4670, CHEM 4700; COMP 1010, COMP 1020, COMP 1260, COMP 1270; ENG 1420; ENTR 2020; MATH 1700¹; MBIO 2110, **MBIO 3280** (MBIO 2280), MBIO 3010, MBIO 3030, MBIO 3430, **MBIO 4440** (MBIO 3440), MBIO 3450, MBIO 3460, MBIO 3470, **MBIO 4480** (MBIO 3480), MBIO 4010, MBIO 4410, MBIO 4470, MBIO 4600, MBIO 4610, MBIO 4672; PHAC 4030, PHAC 4040; PHIL 2740, PHIL 2830; PLNT 3140, PLNT 3500, PLNT 3520, PLNT 3570, **PLNT 4310**, PLNT 4330, PLNT 4550, PLNT 4560, PLNT 4570, PLNT 4580, PLNT 4590, PLNT 4600; STAT 2000

Other suitable courses may be selected through consultation with the department heads.

Proposed Program requirements:

Common Core Courses (Honours and Major Programs):

BIOL 2500 (BOTN 2460), BIOL 2520 (ZOO 2280), BIOL 4560 (ZOO 4140), BIOL 4610, CHEM 2210, CHEM 2220, CHEM/MBIO 2360, CHEM/MBIO 2370, CHEM 2470, CHEM 3590, CHEM 4630, MBIO 1010, MBIO 2020, MBIO 3000, MBIO 3410, MBIO 4520, PLNT 2530, PLNT 4610

4.4.2 Biotechnology Programs (incl. Co-operative Option if selected) - Offered jointly by the Departments of Chemistry and Microbiology			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
JOINT HONOURS (incl. Co-operative Option if selected) 120 credit hours			
BIOL 1020, BIOL 1030	CHEM 2210, CHEM 2220, CHEM 2360 (MBIO 2360), CHEM 2370 (MBIO 2370), CHEM 2470	CHEM 3590	CHEM 4630
CHEM 1300, CHEM 1310		MBIO 3000, MBIO 3410	<u>MBIO 4520</u>
PHYS 1020 (or PHYS 1050)	MBIO 1010, MBIO 2020	PLNT 2530	BIOL 4560 (ZOO 4140), BIOL 4610
MATH 1500 ¹	BIOL 2500 (BOTN 2460), BIOL 2520 (ZOO 2280)		BTEC 4000 (6), PLNT 4610
STAT 1000			
The requirements listed below can be completed in U1 or Year 2:		The requirements listed below can be completed in 3rd or 4th year:	
6 credit hours from the Faculty of Arts including the required "W" course		27 credit hours of Required Program Stream courses ² and electives ³ .	
6 credit hours of Required Program Stream ² courses or electives ³		Work Terms (if Co-op Selected): BTEC 3980, BTEC 3990	Work Terms (if Co-op Selected): BTEC 4980 and/or BTEC 4990
30 Hours	30 Hours	30 Hours	30 Hours
JOINT 4-YEAR MAJOR (incl. Co-operative Option if selected) 120 credit hours			
BIOL 1020, BIOL 1030	CHEM 2210, CHEM 2220, CHEM 2360 (MBIO 2360), CHEM 2370 (MBIO 2370), CHEM 2470	CHEM 3590	CHEM 4630
CHEM 1300, CHEM 1310		MBIO 3000, MBIO 3410	<u>MBIO 4520</u>
PHYS 1020 (or PHYS 1050)	MBIO 1010, MBIO 2020	PLNT 2530	BIOL 4560 (ZOO 4140), BIOL 4610
MATH 1500 ¹	BIOL 2500 (BOTN 2460), BIOL 2520 (ZOO 2280)		PLNT 4610
STAT 1000			
The requirements listed below can be completed in U1 or Year 2:		The requirements listed below can be completed during 3rd and 4th year:	
6 credit hours from the Faculty of Arts including the required "W" course		33 credit hours of Required Program Stream Courses ² and approved electives ³ .	
6 credit hours of Required Program Stream Courses ² and / or approved electives ³		Work Terms (if Co-op Selected): BTEC 3980, BTEC 3990	Work Terms (if Co-op Selected): BTEC 4980 and/or BTEC 4990
NOTES: 1. MATH 1510 or 1520 may be used in place of MATH 1500; MATH 1710 may be used in place of MATH 1700. 2. Program stream courses requirements can be found above the Biotechnology program charts. 3. Refer to list of recommended elective courses and complementary Minor programs (listed above charts) prior to registration in your electives. (The number 6 in brackets indicates a 6 credit hour course.)			

Department of Chemistry

Deletions:

CHEM 2380 Chemistry of the Main Group Elements Cr.Hrs. 3 -3
 CHEM 3380 Inorganic Chemistry Cr.Hrs. 3 -3

Introductions:

CHEM 2400 Inorganic Chemistry: Structure and Applications Cr.Hrs. 3 +3
 (Lab required) Overview of chemical bonding, structure and reactivity across the Periodic Table, illustrated by examples linking Inorganic Chemistry with e.g. materials science and biochemistry. The lab component involves synthesis and analysis of simple inorganic

compounds. Not to be held with CHEM 2380, CHEM 2381 or CHEM 2401. Prerequisite: CHEM 1310 (C) or CHEM 1311 (C).

CHEM 3400 Inorganic Chemistry: Reactivity and Properties Cr.Hrs. 3 +3
(Lab required) Advanced chemistry of the elements with emphasis on chemical reactivity, electronic structure and physical properties of inorganic compounds. The laboratory focuses on the preparation, structure determination and spectroscopic characterization of inorganic compounds. This course may not be held for credit with CHEM 3380. Prerequisite: CHEM 2400 (C) or CHEM 2380 (C).

Modifications:

CHEM 3570 Biophysical Chemistry Cr Hrs. 3
The application of physical chemistry to biological problems, with an emphasis on quantitative interpretation. Topics include enzyme kinetics, bioenergetics, transport processes and spectroscopy. Prerequisites: CHEM 2360 and MATH 1500 (or equivalent). CHEM 2280 is recommended.

CHEM 4570 Topics in Inorganic Chemistry Cr.Hrs. 3
(formerly 002.457) A variety of topics from recent literature. Prerequisite: CHEM 3400 (C) or CHEM 3380 (002.338)(C).

CHEM 4600 Advanced Chemical Techniques Cr.Hrs. 3
(formerly 002.460) (Lab required) A workshop course consisting of lectures, problem solving, and advanced instrumental techniques. The course is designed to train potential research students in techniques like NMR, mass spectroscopy, and chromatography. This course is required of all final year Honours students in Chemistry. Prerequisite: CHEM 3360 (002.336)(C), CHEM 3400 (C), CHEM 3380(002.338)(C), CHEM 3390 (002.339)(C), or CHEM 3580 (002.358)(C).

CHEM 4680 Organometallic Chemistry Cr. Hrs. 3
(formerly 002.468) Chemistry of organometallic compounds of the transition metals and representative elements. Prerequisite: CHEM 3400 (C), CHEM 3380 (002.338)(C), or CHEM 3390 (002.339)(C).

NET CHANGE IN CREDIT HOURS: 0

Program Modifications:

Proposed Chemistry Honours Program: Replace 2380 and 3380 with 2400 and 3400

4.5.2 Chemistry

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
HONOURS⁴ (incl. Co-operative Option if selected) 120 CREDIT HOURS			
CHEM 1300 (B), CHEM 1310 (B) PHYS 1050 (C+) (or PHYS 1020 (B)) and PHYS 1070 (C) MATH 1500 ¹ (C), MATH 1700 ¹ (C)	CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2290, CHEM 2400 CHEM 2470, CHEM 2860 (CHEM 2360)	CHEM 3400 , CHEM 3590	CHEM 4600, CHEM 4710 (6)
In University 1 or Year 2 the following must be completed: 6 credit hours from the Faculty of Arts, which should include the required "W" course 3 credit hours from Mathematics, Statistics or Computer Science courses ³ 12 credit hours of approved electives in years one and two ⁶		Sufficient credit hours (18) from the 2000, 3000 and 4000 level Chemistry ⁴ courses not yet taken to total a minimum of 60 credit hours. These credit hours may make up part of a focus area. 9 credit hours of non-Chemistry courses which are part of a designated focus area ⁴ . If no Focus Area is selected, students must choose 9 credit hours of Chemistry courses. 18 credit hours of approved electives in years three and four ⁶	
		Work Terms (if Co-op selected): CHEM 3980, CHEM 3990	Work Terms (if Co-op selected): CHEM 4980 and/or CHEM 4990
30 Hours	30 Hours	30 Hours	30 Hours

Proposed Major Degree Program:

4-YEAR MAJOR^{4,5} (incl. Co-operative Option if selected) 120 CREDIT HOURS (comprising courses listed in chart below, and electives)

CHEM 1300, CHEM 1310 (C+) PHYS 1050 (or PHYS 1020 (C+)) and PHYS 1070 MATH 1500 ¹ , MATH 1700 ¹	CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2290, CHEM 2400 , CHEM 2470, CHEM 2860 (CHEM 2360)	CHEM 3400 , CHEM 3590	CHEM 4600
In University 1 or Year 2 the following must be completed: 6 credit hours from the Faculty of Arts, which should include the required "W" course. 3 credit hours from Mathematics, Statistics or Computer Science courses ³		Sufficient credit hours (18) from the 2000, 3000 and 4000 level Chemistry ⁴ courses not yet taken to total a minimum of 54 credit hours. These credit hours may make up part of a focus area. 9 credit hours of non-Chemistry courses which are part of a designated focus area ⁴ . (Note: If no Focus Area is selected, students must choose 9 credit hours of Chemistry courses.)	
		Work Terms (if Co-op selected): CHEM 3980, CHEM 3990	Work Terms (if Co-op selected): CHEM 4980 and/or CHEM 4990
30 Hours	30 Hours	30 Hours	30 Hours

Proposed Chemistry General Degree Program:

30 Hours	30 Hours	30 Hours	30 Hours
THREE YEAR B.Sc. General – Chemistry Focus 90 CREDIT HOURS			
CHEM 1300, CHEM 1310 (C)	21 hours of required 2000 level Chemistry courses: CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2290, <u>CHEM 2400</u> , CHEM 2470, CHEM 2360		
BIOL 1020, BIOL 1030			
MATH 1500, MATH 1700 ¹	15 credit hours of 2000 level or higher CHEM: Excluding the Chemistry service courses (2240, 2560, 2770, 2780), Co-op courses (3980, 3990, 4980, 4990) and specialized courses (4600, 4700, 4710). A minimum of 6 credit hours must be chosen from the 3000 / 4000 level.		
PHYS 1050 ² , PHYS 1070 ²			
6 credit hours from the Faculty of Arts. (Should include the student's "W" requirement.)	6 credit hours of electives to be chosen from outside the Faculty of Science 18 credit hours of open electives		
THREE YEAR GENERAL 90 CREDIT HOURS			
CHEM 1300, CHEM 1310 (C)	a minimum of 18 credit hours from the following list of advanced level courses: CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2290, CHEM 2360, CHEM 2370, <u>CHEM 2400</u> , CHEM 2470, CHEM 3360, CHEM 3370, <u>CHEM 3400</u> , CHEM 3390, CHEM 3570, CHEM 3580, CHEM 3590, CHEM 4360, CHEM 4370, CHEM 4570, CHEM 4580, CHEM 4590, CHEM 4620, CHEM 4630, CHEM 4640, CHEM 4660, CHEM 4670, CHEM 4680, CHEM 4690 (subject to the Faculty requirement that of the 36 credit hours in the two advanced level Science areas, at least 6 credit hours must be at the 3000/4000 level).		

Proposed Chemistry – Physics Joint Honours Program:

4.5.3 Chemistry – Physics Joint Honours Program

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
JOINT HONOURS² 120 CREDIT HOURS			
CHEM 1300 (B), CHEM 1310 (B) PHYS 1050 (B) (or PHYS 1020 (B+)), PHYS 1070 (B) MATH 1500 ¹ (B), MATH 1700 ¹ (B) 6 credit hours from the Faculty of Arts, which should include the required "W" course 6 credit hours of electives	CHEM 2210, CHEM 2220, CHEM 2280, CHEM 2290, CHEM 2400 or CHEM 2470 PHYS 2390, PHYS 2380, PHYS 2490, PHYS 2600, PHYS 2650	12 credit hours from whichever of CHEM 2400 or 2470 not taken and any of CHEM 2860 (CHEM 2360 /MBIO 2360), CHEM 2370 (MBIO 2370) or 3000 / 4000 level Chemistry courses PHYS 2260, PHYS 2610, PHYS 3380, PHYS 3630, PHYS 3670, PHYS 3680	CHEM 4600 CHEM 4710 (6) or both PHYS 4672 and PHYS 4674 PHYS 4390 6 credit hours of 3000 / 4000 level Physics courses 3 credit hours of 3000 / 4000 level Chemistry courses 9 credit hours of approved electives
30 Hours	30 Hours	30 Hours	30 Hours

Department of Computer Science

Deletion:

COMP 4290 Compiler Construction Cr.Hrs. 3

-3

Introduction:

COMP 1012 Computer Programming for Scientists and Engineers Cr.Hrs. 3

+3

(Lab required) An introduction to computer programming suitable for solving problems in science and engineering. Students will implement algorithms for numerical processing, statistical analysis and matrix operations. Not to be held with COMP 1010. Prerequisite: Mathematics 40S or equivalent. Pre- or corequisite: MATH 1500 (or equivalent).

Modifications:

COMP 1010 Introductory Computer Science I Cr.Hrs. 3

(Lab required)(formerly 074.101) An introduction to computer programming using a procedural high level language. Not to be held with COMP 1011 or COMP 1012. Prerequisite: any grade 12 or 40S Mathematics, or equivalent.

COMP 1020 Introductory Computer Science II Cr.Hrs. 3

(Lab required)(formerly 074.102) More features of a procedural language, elements of programming. Not to be held with COMP 1021. Prerequisite: COMP 1010 (C) or COMP 1011 (074.101)(C); or COMP 1012 (C); or High School Computer Science 40S (75%) and any grade 12 or 40S Mathematics, or equivalent.

COMP 2130 Discrete Mathematics for Computer Science Cr.Hrs. 3

(formerly 074.213) An introduction to the set theory, logic, integers, combinatorics and functions for today's computer scientists. Prerequisites: COMP 1020 (C) or COMP 1021 (C); and a "C" average in one of MATH 1210, MATH 1300, MATH 1301 (136.130), MATH 1310 (136.131); and one of MATH 1500, MATH 1501 (136.151), MATH 1520 (136.152), 136.153, or MATH 1690 (136.169).

COMP 2190 Introduction to Scientific Computing Cr.Hrs. 3

(formerly 074.219) An applied computational course introducing topics such as approximation by polynomials, solution of non-linear equations, linear systems, simulation and computational geometry. May not hold with COMP 2191. Prerequisites: A grade of "C" or better in one of COMP 1020, COMP 1021 (074.102), or COMP 1012; and a grade of "C" or better in one of MATH 1500, MATH 1501 (136.150), MATH 1510 (136.151), MATH 1520 (136.152), 136.153, or MATH 1690 (136.169). Prerequisite or concurrent registration: One of MATH 1300, MATH 1301, or MATH 1310.

NET CHANGE IN CREDIT HOURS: 0

Program Modifications:

Proposed Entry Requirements for Computer Science Honours:

To enter the Computer Science Honours program, a student must have a "B" in COMP 1020 and Grade Point Average of 3.00 on all courses completed at the end of Year 1 (minimum 24 credit hours). Students are strongly encouraged to complete MATH 1300 and MATH 1500 (or equivalents) with at least a "C" average prior to entering the program. Failure to complete these first year Mathematics requirements will result in the inability to register for certain 2000 level required courses.

Proposed Entry Requirements for Computer Science 4-year Major:

To enter the Computer Science Major Degree program, students must have a DGPA of at least 2.00 (on a minimum of 24 credit hours) and must also obtain a "C+" or better in COMP 1020. Students are strongly encouraged to complete MATH 1300 and MATH 1500 (or equivalents) with at least a "C" average prior to entering the program. Failure to complete these first year Mathematics requirements will result in the inability to register for certain 2000 level required courses.

Genetics Program

Program Modifications:

Proposed:

The optional courses are:

Biological Sciences: BIOL 2410 (ZOO 2530), BIOL 2420 (ZOO 2540), BIOL 2540 (ZOO 2150), BIOL 3290, BIOL 3300 (BOTN 3000, ZOO 3000), BIOL 3560 (ZOO 3060), BIOL 4500 (BOTN 4180), BIOL 4540 (ZOO 4150), BIOL 4542 (ZOO 4270), BIOL 4560 (ZOO 4140).

Chemistry: CHEM 2280, CHEM 2290, CHEM 4360, CHEM 4370, CHEM 4620, CHEM 4630

Microbiology: MBIO 3000, MBIO 3010, MBIO 3030, MBIO 3430, MBIO 3440, MBIO 3450, MBIO 3460, MBIO 4010, MBIO 4410, **MBIO 4440**, **MBIO 4520**, MBIO 4530* (6), MBIO 4540, MBIO 4670 (or the former MBIO 4570), MBIO 4600, MBIO 4610.

Forensic Science: FORS 2000

Computer Science: COMP 1010, COMP 1020, COMP 1260, COMP 1270

Physics: PHYS 1020, PHYS 1030, PHYS 1050, PHYS 1070

Animal Science: ANSC 3500, ANSC 4280

Pharmacology: PHAC 4030, PHAC 4040

Plant Science: PLNT 2530, PLNT 3500, PLNT 3520, PLNT 4330, **4610**

Human Genetics: BGEN 4010*

By an appropriate selection of courses from this list, students can obtain particular program emphasis in either plant, human or molecular genetics.

All programs must contain a minimum of 18 credit hours of 4000 level courses as options in Years 3 and 4.

Other suitable optional courses may be arranged through consultation with the Genetics program committee.

***NOTE:** MBIO 4530 (6) is a project course. A research project is chosen in consultation with the Microbiology department and the Genetics program committee, and is supervised by a staff member. Only one of MBIO 4530 or BGEN 4010 may be elected in this program.

Department of Mathematics

Modifications:

MATH 3810 Partial Differential Equations 1 Cr. Hrs. 3

(formerly 136.381) Fourier series and introductory Sturm-Liouville theory. Derivation of wave, diffusion and Laplace equations. Solution by separation of variables. Prerequisites: a grade of "C" or better in both MATH 2720 (or equivalent MATH 2721, 136.272, 136.270) and MATH 2730 (or equivalent MATH 2731, 136.273, 136.271) or MATH 2750 (136.275); and MATH 2800 (C) or MATH 2801 (C); or consent of department.

MATH 4810 Partial Differential Equations 2 Cr.Hrs. 3

(formerly 136.481) Partial differential equations and their classification. Special functions and generalized Eigen function expansions. Solution by separation of variables, and transform methods. Prerequisite: MATH 3800 (136.380)(C) and MATH 3810 (136.381)(C).

NET CHANGE IN CREDIT HOURS: 0

Program Modifications:

Proposed Four-Year Applied Math with Economics Option requirements:

APPLIED MATHEMATICS FOUR YEAR MAJOR with ECONOMICS OPTION ⁵ 120 CREDIT HOURS	
MATH 1200, MATH 1310 ¹ , MATH 1500 ¹ , MATH 1700 ¹	MATH 2300, MATH 2600, MATH 2720, MATH 2730, MATH 2800
	MATH 2400, MATH 3600, MATH 3700, MATH 3740 (6), MATH 3800, MATH 3810, MATH 3820, MATH 4310
ECON 1010 and ECON 1020 (or both ECON 1210 and ECON 1220)	
9 credit hours of electives	STAT 1000, STAT 2000 COMP 1010 ECON 2530, ECON 3730
	3 credit hours from: MATH 2450 (6), MATH 2500, MATH 2552 (6), or any 3000 / 4000 level MATH course
	6 credit hours from: ECON 2450, ECON 2460, ECON 2470 and ECON 2480
	24 credit hours of approved electives taken during years 2, 3 and 4
3 credit hour "W" course must be taken in University 1 or Year 2	

Proposed Mathematics – Economics Joint Honours requirements:

4.9.4 Mathematics – Economics Joint Honours Program			
The Department of Mathematics along with the Department of Economics (Faculty of Arts) offer a Joint Honours program for students wishing in depth study in Mathematics and Economics. For Economics course listings, refer to the Faculty of Arts chapter in the Calendar.			
To enter the Joint Honours Mathematics - Economics program, the student must have a minimum grade of "B" in: both of ECON 1010 and ECON 1020 (or ECON 1210 and ECON 1220), MATH 1300 ¹ , MATH 1700 ¹ and have satisfied the Faculty of Science requirements for entry to the honours program.			
UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
JOINT HONOURS 120 CREDIT HOURS			
ECON 1010 and ECON 1020 (or ECON 1210 and ECON 1220)	ECON 2700, ECON 2800	ECON 3700, ECON 3800, ECON 3180 ⁷ (or STAT 2000) ³	
MATH 1300 ¹ , MATH 1500 ^{1,2} , MATH 1700 ^{1,2}	MATH 2202, MATH 2352 (6), MATH 2750 (6), MATH 2800	MATH 2600 ³ , MATH 3230, MATH 3300 ⁵ , MATH 3400, MATH 3700 (or MATH 3710), MATH 3740 (or MATH 3760) (6)	
STAT 1000 ³		24 credit hours of approved Economics courses ⁴	
COMP 1010 ³		6 credit hours of Mathematics courses at the 3000 or 4000 level, which must include at least one of MATH 3510, MATH 3600, MATH 3810, MATH 3820, MATH 4310, or any Mathematics course at the 4000 level.	
9 credit hours of electives ⁶ , including the required "W" course.	6 credit hours of approved electives ⁶		

Department of Microbiology

Deletions:

MBIO 2280 Microbial Ecology Cr.Hrs. 3	-3
MBIO 3440 Microbial Physiology Cr.Hrs. 3	-3
MBIO 3480 Microbial Diversity Cr.Hrs. 3	-3
MBIO 4320 Environmental Microbiology Cr.Hrs. 3	-3
MBIO 4470 Fermentations Cr.Hrs. 3	-3
MBIO 4510 Industrial Microbiology Cr.Hrs. 3	-3

Introductions:

MBIO 3280 Microbial Communities Cr.Hrs. 3	+3
This course will examine microbial communities, which will be discussed in terms of their composition, physiological adaptations and their effects on their abiotic and biological	

surroundings. Topics will include nutrient cycling, biodegradation and adaptation to extreme environments, and the applications arising from these microbial functions. Methods for quantitation of microbial biomass and biological activity will be discussed. This course may not be held for credit with MBIO 2280. Prerequisites: MBIO 1010 (MBIO 1011) or MBIO 2100 (MBIO 2101, 060.210); and CHEM 1310 (CHEM 1311, 002.121). MBIO 2020 (MBIO 2021) or MBIO 2410 are recommended.

MBIO 4440 Systems Microbiology Cr.Hrs. 3 +3
(Lab required) The purpose of this course is to use knowledge of the components of the bacterial cell to synthesize an understanding of the growth of microbes and their adaptation to their environments. The most recent research tools and systems biology approaches will be discussed. Prerequisites: one of MBIO 3030 (MBIO 3031) (C) or MBIO 2110 (MBIO 2111, 60.211) (C); and a grade of "C" or better in one of MBIO 2370, MBIO 2371, CHEM 2370, or CHEM 2371.

MBIO 4480 Microbes in our Environment Cr.Hrs. 3 +3
(Lab required) A course investigating the diversity of roles microbes and microbial communities play in their immediate environments, and how they alter them. Environments to be examined may include the human body, waste treatment facilities and extreme environments. Molecular tools to study the community structure and roles of individual organisms will also be discussed. Prerequisites: one of MBIO 3030 (MBIO 3031) (C) or MBIO 2110 (MBIO 2111)(C); and a grade of C or better in one of MBIO 2370, MBIO 2371, CHEM 2370, or CHEM 2371.

MBIO 4520 Industrial Bioprocessing Cr.Hrs. 3 +3
(Lab required) Bioprocesses for a range of commercially-important health-care and industrial products including antibiotics, vaccines, steroids, therapeutic recombinant proteins, monoclonal antibodies and ethanol will be discussed. Other topics will include bioreactor design, metabolic engineering, applies genetic engineering and animal cell technology. Prerequisites: one of MBIO 2100 (MBIO 2101) (C) or MBIO 3030 (MBIO 3031) (C); and a grade of "C+" or better in one of MBIO 2370, MBIO 2371, CHEM 2370 or CHEM 2371.

Modifications:

MBIO 1010 Microbiology I Cr.Hrs. 3
(Lab required) Topics will include the definition and history of microbiology, concepts of practical microbiology, prokaryotic cell structure, prokaryotic specialization in gene expression and transfer of genetic information, the role of microbes in environments including the human body, and applications of microbiology to food production and biotechnology. Not to be held with MIBO 1011, MBIO 2100 (MBIO 2101, 060.210) or MBIO 2110 (MBIO 2111, 060.211). Prerequisite or concurrent requirement: BIOL 1020.

MBIO 2020 Microbiology II Cr.Hrs. 3
(Lab required) Topics will include bacterial growth, chromosome replication, the specifics of transcription and translation and their application to the regulation of microbial gene expression. Families of bacterial and animal viruses, their modes of reproduction and pathogenicity will be discussed. Mutation and gene transfer in bacteria will be introduced. Not to be held with MBIO 2021 or MBIO 2110 (MBIO 2111, 060.211). Prerequisites: MBIO 1010 or MBIO 1011; and one of CHEM 1310, CHEM 1311, or CHEM 1320.

MBIO 2230 Introductory Biogeochemistry Cr.Hrs. 3

(Formerly 060.223) The roles and interactions of biological, chemical and geological reactions in determining the composition of the environment. Microorganisms as major agents of biogeochemical change and their roles in the element cycles will be especially emphasized. Prerequisite: a grade of "C" or better in one of MBIO 1010, MBIO 1011, BIOL 1030, BIOL 1031 or the former 071.125; and CHEM 1310 (C) or CHEM 1311 (002.131) (C). Not available to students who have previously obtained credit in MBIO 4320 or MBIO 4440 or are currently registered in MBIO 4440.

MBIO 2410 Essentials of Molecular Biology Cr.Hrs. 3

An introduction to the mechanisms, themes and patterns that are present in the molecular biology of both eukaryotic and prokaryotic organisms. The applications of molecular biology to disciplines such as genomics, applied bioinformatics and medical microbiology will be discussed. Not available to students who have previously obtained credit in MBIO 2020 or MBIO 2021 (060.211). Prerequisite: one of grade 12 Biology, grade 12 Chemistry, BIOL 1000, CHEM 1000, or any higher level Chemistry or Biology course; or consent of department. NOTE: MBIO 2410 is intended for students outside of Microbiology and Biological Sciences who require an introduction to molecular biology, such as those with interests in bioinformatics, biophysics, or bioengineering. It may be used to fulfill Microbiology Major or Honours program course requirements and it may serve as Advanced Level Microbiology in the three-year general degree program if completed prior to or concurrently with MBIO 2020.

MBIO 3000 Applied Biological Safety Cr.Hrs. 3

A comprehensive overview of (i) applied biological safety in research and industrial environments and (ii) the disease-causing features of relevant infectious agents and considerations for their containment. The course consists of lectures and demonstration components. Prerequisite: MBIO 1010 (MBIO 1011)(C) and one of CHEM 1310 (CHEM 1311)(C) or CHEM 1320(C); or MBIO 2100 (MBIO 2101) (C); or permission of instructor. Check with department for availability.

MBIO 3010 Mechanisms of Microbial Disease Cr.Hrs. 3

(formerly 060.301) A consideration of host-parasite relationships, an introduction to the immune response, microbial pathogenesis, viral diseases, clinical microbiology and public health, and an introduction to antimicrobial agents. Not to be held with MBIO 3011. Prerequisites: MBIO 2020 (MBIO 2021)(C) or MBIO 2100 (MBIO 2101)(C); and a grade of 'C' or better in one of MBIO 2370, MBIO 2371, CHEM 2370, or CHEM 2371.

MBIO 3030 Microbiology III Cr.Hrs. 3

(Lab required) The course will include an introduction to microbial growth and genomics approaches used for the analysis of microbial metabolism. Using these tools, the physiology of microbial cell walls, transport, and motility, as well as microbial metabolism as related to ATP production, respiration, fermentation and carbon fixation will be discussed. Not to be held with MBIO 3031 or the former MBIO 2100 (060.210). Prerequisites: MBIO 2020 (MBIO 2021)(C); and a grade of 'C' or better in one of MBIO 2370, MBIO 2371, CHEM 2370, or CHEM 2371; or consent of instructor.

MBIO 3410 Molecular Biology Cr.Hrs. 3

(formerly 060.341) A rigorous treatment of the foundations of modern day molecular biology as it pertains to molecular disease, gene and cell manipulation, and cellular controls. Not to be held with MBIO 3411. Prerequisites: S grade of 'C' or better in one of MBIO 2370, MBIO 2371, CHEM 2370, CHEM 2371, MBIO 2780, or CHEM 2780; and a grade of 'C' or better in one of

MBIO 2020 (MBIO 2021), MBIO 2110 (MBIO 2111), BIOL 2520 (BIOL 2521, ZOOL 2280, ZOOL 2281), or BIOL 2500 (BIOL 2501, BOTN 2461, BOTN 2460).

MBIO 3430 Molecular Evolution Cr.Hrs. 3

(formerly 060.343) An analysis starting with prebiotic evolution, progressing through the elaboration of macromolecules and examining their adaptation to their function as cellular components. Proteins, carbohydrates, and nucleic acids as structural, catalytic, and genetic elements in evolution of living systems. Prerequisite: MBIO 2410 or MBIO 2410 or permission of instructor. MBIO 2020 and one of MBIO 2370, MBIO 2371 (060.237), CHEM 2370, or CHEM 2371 (002.237), MBIO 2780 (060.278), or CHEM 2780 (002.278) are strongly recommended for students who have not completed MBIO 3410.

MBIO 3450 Regulation of Biochemical Processes Cr.Hrs. 3

(Formerly 060.345) Mechanisms of regulation of enzyme activity, including allostery, control of selected biosynthetic and degradative pathways and regulation of gene expression. Contact department regarding availability. Not to be held with MBIO 3451. Prerequisites: MBIO 2020 (MBIO 2021)(C) or MBIO 2110 (MBIO 2111) (C); and a grade of "C" or better in one of MBIO 2370, MBIO 2371, CHEM 2370, or CHEM 2371; or consent of department.

MBIO 3470 Microbial Systematics Cr.Hrs. 3

(Lab Required) (Formerly 060.347) Characterization and classification of the major group of micro-organisms. Bases for divisions and the relatedness among organisms will be studied. Laboratory work involves the identification of representative species. Prerequisite: MBIO 3030 (MBIO 3031)(C) or MBIO 2110 (MBIO 2111) (C).

MBIO 4540 Biological Energy Transduction Cr.Hrs. 3

(Formerly 060.454) Biochemistry of biological processes involving interconversion of different forms of energy such as oxidative phosphorylation, membrane transport and contractile processes. Not to be held with MBIO 4541. Prerequisite: MBIO 2020 (MBIO 2021) (C) or MBIO 2110 (MBIO 2111) (C); and a grade of "C" or better in one of MBIO 2370, MBIO 2371, CHEM 2370, or CHEM 2371; or consent of the department. MBIO 3030 (MBIO 3031) is recommended as a prerequisite to this course.

MBIO 4600 Molecular Genetics of Prokaryotes Cr.Hrs. 3

(Lab Required) (Formerly 060.460) A detailed examination of replication, expression, mutability, repair and transposition of DNA in bacteria and their viruses. Priority will be given to Science Honours and Majors students. Check with the department for availability. Not to be held with MBIO 4601, MBIO 4602, or the former 060.452 or 060.456. Prerequisites: MBIO 2020 (MBIO 2021)(C) or MBIO 2110 (MBIO 2111) (C); and a grade of "C" or better in one of MBIO 2370, MBIO 2371, CHEM 2370, or CHEM 2371. BIOL 2500 (BIOL 2501, BOTN 2460, BOTN 2461) is recommended.

MBIO 4602 Molecular Genetics of Prokaryotes - Lectures Cr.Hrs. 3

A detailed examination of replication, expression, mutability, repair and transposition of DNA in bacteria and their viruses. Lecture material will be identical to that of MBIO 4600, but MBIO 4020 lacks the laboratory component. Honours and Majors students must register in MBIO 4600. Check with the department for availability. Not to be held with MBIO 4600, MBIO 4601 or the former 060.460, 060.452 or 060.456. Prerequisites: MBIO 2020 (MBIO 2021) (C) or the former MBIO 2110 (MBIO 2111) (C); and a grade of "C" or better in one of MBIO 2370, MBIO 2371, CHEM 2370, or CHEM 2371. BIOL 2500 (BIOL 2501, BOTN 2460, BOTN 2461) is recommended.

MBIO 4610 Molecular Genetics of Eukaryotes Cr.Hrs. 3

(Lab Required) (Formerly 060.461) A comprehensive study dealing with replication and expression of DNA, genome structure, and the involvement of genes in diseases such as cancer. Priority will be given to Science Honours and Majors students. Check with the department for availability. Not to be held with MBIO 4612, or the former 060.452 or 060.455. Prerequisites: MBIO 2020 (MBIO 2021)(C) or MBIO 2110 (MBIO 2111) (C); and a grade of "C" or better in one of MBIO 2370, MBIO 2371, CHEM 2370, or CHEM 2371. BIOL 2500 (BIOL 2501, BOTN 2460, BOTN 2461) is recommended.

MBIO 4612 Molecular Genetics of Eukaryotes - Lectures Cr.Hrs. 3

A comprehensive study dealing with replication and expression of DNA, genome structure, and the involvement of genes in diseases such as cancer. Lecture material will be identical to that of MBIO 4610, but MBIO 4612 lacks the laboratory component. Honours and Majors students must register in MBIO 4610. Check with the department for availability. Not to be held with the MBIO 4610, the former 60.461, 060.452 or 060.455. Prerequisites: MBIO 2020 (MBIO 2021)(C) or MBIO 2110 (MBIO 2111) (C); and a grade of "C" or better in one of MBIO 2370, MBIO 2371, CHEM 2370, or CHEM 2371. BIOL 2500 (BIOL 2501, BOTN 2460, BOTN 2461) is recommended.

NET CHANGE IN CREDIT HOURS: -6**Program Modifications:****Proposed Honours Requirements:****HONOURS 120 CREDIT HOURS**

MBIO 1010 ³	MBIO 2020, MBIO 2360 (CHEM 2360), MBIO 2370 (CHEM 2370)	MBIO 3010, MBIO 3280 , MBIO 3030, MBIO 3410, MBIO 3470	MBIO 4010, MBIO 4440 , MBIO 4480 , MBIO 4530 (6), MBIO 4600, MBIO 4610
BIOL 1020, BIOL 1030	BIOL 2500 (BOTN 2460), BIOL 2520 (ZOO 2280)		
CHEM 1300, CHEM 1310	CHEM 2210, CHEM 2220		
	3 credit hours from Microbiology or from the option list		

In University 1 or Year 2 the following must be completed:

3 credit hours of Mathematics or Physics from MATH 1200, MATH 1300¹, MATH 1500¹, PHYS 1020 or PHYS 1050

STAT 1000

6 credit hours from the Faculty of Arts, which should include the required "W" course.

9 credit hours of approved electives

15 credit hours of Microbiology courses³

9 credit hours chosen from Microbiology courses³ or from the option list (see above)

30 Hours	30 Hours	30 Hours	30 Hours
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Proposed Honours Co-operative Option Requirements:

HONOURS COOPERATIVE OPTION 120 CREDIT HOURS

MBIO 1010 ⁵	MBIO 2020, MBIO 2360 (CHEM 2360), MBIO 3010, MBIO 3030, MBIO 3280 , MBIO 3410, MBIO 3470, MBIO 4010, MBIO 4440 , MBIO 4480 , MBIO 4600, MBIO 4610
BIOL 1020, BIOL 1030	MBIO 2370 (CHEM 2370)
CHEM 1300, CHEM 1310	BIOL 2500 (BOTN 2460), BIOL 2520 (ZOOL 2280)
	CHEM 2210, CHEM 2220
	<u>3 credit hours chosen from Microbiology courses³ or from the option list (see above)</u>
In University 1 or Year 2 the following must be completed:	
3 credit hours of Mathematics or Physics from MATH 1200, MATH 1300 ¹ , MATH 1500 ¹ , PHYS 1020 or PHYS 1050	
STAT 1000	
6 credit hours from the Faculty of Arts, which should include the required "W" course	
9 credit hours of approved electives	
30 Hours	30 Hours
30 Hours	30 Hours
30 Hours	30 Hours
30 Hours	30 Hours

Work Terms:

MBIO 3980, MBIO 3990, MBIO 4980 and/or MBIO 4990

Proposed Major Degree Requirements:

FOUR YEAR MAJOR⁴ 120 CREDIT HOURS

MBIO 1010 ⁵	MBIO 2020, MBIO 2360 (CHEM 2360), MBIO 3010 , MBIO 3030, MBIO 3410
BIOL 1020, BIOL 1030	MBIO 2370 (CHEM 2370)
CHEM 1300, CHEM 1310	BIOL 2500 (BOTN 2460), BIOL 2520 (ZOOL 2280)
	CHEM 2210, CHEM 2220
In University 1 or Year 2 the following must be completed:	
3 credit hours of Mathematics or Physics from MATH 1200, MATH 1300 ¹ , MATH 1500 ¹ , PHYS 1020 or PHYS 1050	
STAT 1000	
6 credit hours from the Faculty of Arts, which should include the required "W" course.	
12 credit hours of approved electives	
24 credit hours of Microbiology courses ² (including a minimum of 15 credit hours at the 4000 level ^{2a})	
9 credit hours of Microbiology courses ² or courses chosen from the option list (see above)	
18 credit hours of approved electives	

Department of Physics and Astronomy

Program modifications:

Proposed Honours Regulations:

Honours

To **enter** the Honours program in Physics and Astronomy, a student must have a "B" in PHYS 1070, or a "B+" in PHYS 1030. In addition, a student must satisfy the faculty requirements for entry to the Honours program.

To **continue** in the Honours program, students must achieve a minimum DGPA of 3.00.

To **graduate** with the B. Sc. Honours degree, a student must achieve a minimum DGPA of 3.00 and minimum grade of "C" in each course that contributes to the 120 credit hours of the degree.

Proposed Four-Year Major Degree regulations:

Four Year Major

The goal of this program is to provide an excellent physics education for a student with broad interests. It provides more control over the degree program, permitting significantly more electives and scheduling flexibility.

To **enter** the four year Major program in Physics and Astronomy, a student must have PHYS 1070 (C+) or PHYS 1030 (B). In addition, students must have satisfied the faculty requirements for entry to the four year Major program.

Proposed Honours Option A: Astronomy requirements:

HONOURS Option A: Astronomy ¹ 120 CREDIT HOURS			
PHYS 1050 (or PHYS 1020) and PHYS 1070 (B) (or PHYS 1030 B+)	PHYS 2070 (6), PHYS 2260, PHYS 2380, PHYS 2390, PHYS 2490, PHYS 2600, PHYS 2610, PHYS 2650	PHYS 3180, PHYS 3380, PHYS 3430 (6), PHYS 3630, PHYS 3650, PHYS 3670	PHYS 3680, PHYS 3640, PHYS 4230, PHYS 4240 (6), PHYS 4390
MATH 1300 ³ , MATH 1500 ³ , MATH 1700 ³			<u>A 3 credit hour, 4000 level Physics and Astronomy course</u>
6 credit hours of ARTS including the "W" requirement.			MATH 3130
		<u>9 credit hours of 3000 and/or 4000 level Physics and Astronomy courses.</u>	
9 credit hours of open electives (PHYS 1810 and PHYS 1820 are highly recommended).	3 credit hours of open electives ⁴ .	3 credit hours of open electives ⁴ .	3 credit hours of open electives ⁴ .

Proposed Honours Option B: Physics requirements:

HONOURS Option B: Physics¹ 120 CREDIT HOURS

PHYS 1050 (or PHYS 1020) and PHYS 1070 (B) (or PHYS 1030 B+)	PHYS 2260, PHYS 2380, PHYS 2390, PHYS 2490, PHYS 2600, PHYS 2610, PHYS 2650	PHYS 3380, PHYS 3430 (6), PHYS 3650, PHYS 3670, PHYS 3680, PHYS 3630, PHYS 3640, PHYS 3660	PHYS 4390, PHYS 4510, PHYS 4520, PHYS 4590
MATH 1300 ³ , MATH 1500 ³ , MATH 1700 ³			6 credit hours ⁶ chosen from: PHYS 4672, PHYS 4674, PHYS 4676, PHYS 4678
6 credit hours of ARTS including the "W" requirement.			3 credit hours chosen from: PHYS 4250, PHYS 4600, PHYS 4620
			MATH 3130
9 credit hours of open electives	9 credit hours of open electives ⁴	3 credit hours of open electives ⁴	6 credit hours of open electives⁴

Proposed Honours Option C: Medical and Biological requirements:

HONOURS Option C: Medical and Biological¹ 120 CREDIT HOURS

PHYS 1050 (or PHYS 1020) and PHYS 1070 (B) (or PHYS 1030 B+)	PHYS 2260, PHYS 2380, PHYS 2390, PHYS 2490, PHYS 2600, PHYS 2610, PHYS 2650	PHYS 3380, PHYS 3430 (6), PHYS 3650, PHYS 3670, PHYS 3680, PHYS 3630, PHYS 3640, PHYS 3220	PHYS 4250, PHYS 4560
MATH 1300 ³ , MATH 1500 ³ , MATH 1700 ³			6 credit hours ⁶ chosen from: PHYS 4672, PHYS 4674, PHYS 4676, PHYS 4678
6 credit hours of ARTS including the "W" requirement.			MATH 3130
6 credit hours chosen from: BIOL 1410, BIOL 1412, BIOL 2520⁵		3 credit hours chosen from: PHYS 4360, PHYS 4400, ECE 3780	
3 credit hours of open electives ⁵	9 credit hours of open electives ^{4,5}	15 credit hours of open electives⁴	

Proposed Four-Year Major Degree requirements:

FOUR YEAR MAJOR 120 CREDIT HOURS

PHYS 1050 (or PHYS 1020) and PHYS 1070² (C+) (or PHYS 1030 B)	PHYS 2260, PHYS 2380, PHYS 2390, PHYS 2490, PHYS 2600	PHYS 2610, PHYS 2650, PHYS 3380, PHYS 3670, PHYS 3680	PHYS 3630, PHYS 3640, PHYS 3430 (6), PHYS 3650
MATH 1300 ³ , MATH 1500 ³ , MATH 1700 ³	MATH 1200	3 credit hours of 3000 level Physics and Astronomy	3 hours of 4000 level Physics and Astronomy
6 credit hours from the Faculty of Arts including the required "W" course			MATH 3130
9 credit hours of open electives	12 credit hours of open electives ⁴	12 credit hours of open electives ⁴	9 credit hours of open electives ⁴

Proposed Notes Section:

NOTES:

¹ Students must achieve a minimum grade of "C" in all courses contributing to the Honours program.

³ MATH 1310 may be taken in place of MATH 1300; MATH 1510 or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700; MATH 1690 may be taken in place of MATH 1500 and MATH 1700. MATH 2750 may be taken as a recommended course in lieu of MATH 2720 and MATH 2730.

⁴ Although they are not required courses in the Physics programs, MATH 2720³, MATH 2730³, MATH 2800, and MATH 3700 are highly recommended electives for the Physics Honours and Four Year Major degrees, and should be taken when possible.

⁵ The selection of these 6 credit hours must be made in consultation with the Departmental Program Advisor.

IMPORTANT: The four year Major program need not be completed in the manner prescribed in the chart above. The chart indicates the recommended arrangement of the required courses and is meant to be a guide around which students can plan their program (Letters in brackets refer to minimum prerequisite standing required for further study. The number 6 in brackets indicates a 6 credit hour course).

Department of Statistics

Program modifications:

Proposed Statistics – Actuarial Mathematics Joint Honours requirements:

4.13.3 Statistics – Actuarial Mathematics Joint Honours Program

The Department of Statistics and the Warren Centre for Actuarial Studies and Research offer a joint Honours program for students wishing in depth study in Statistics and Actuarial Mathematics.

Entry Requirements:

To enter the Honours program students must have a minimum grade of "B" in one of the following courses: 3 credit hour approved Written English course, **both of ECON 1010 and ECON 1020**, MATH 1300, MATH 1500, MATH 1700, **or** STAT 1000; and a minimum grade of B in **STAT 2000**. All of these courses are program requirements and students are strongly urged to complete them in first year.

To graduate with the B. Sc. Honours degree, a student must achieve a minimum DGPA of 3.00 and a minimum grade of "C+" in each of the Honours Program Specific courses, and a minimum grade of "C" on all remaining courses that contribute to the 120 credit hours of the degree. See the Calendar entry for each of the Actuarial Mathematics program and the Department of Statistics for the Honours Program Specific courses.

Note: In order to receive course credit and examination exemptions from future Society of Actuaries (SoA) and VEE courses, students must obtain a grade of "B" in the following courses: **both of ECON 1010 and ECON 1020**, ACC 1100, FIN 2200, STAT 3470, and STAT 3490. Contact the Warren Centre for Actuarial Studies and Research for further information.

Recommended Electives:

ACT 4050, ACT 4150, ACT 4240; FIN 3410; COMP 1010; STAT 4630

UNIVERSITY 1	YEAR 2	YEAR 3 ²	YEAR 4
JOINT HONOURS 120 CREDIT HOURS			
ECON 1010⁶ and ECON 1020⁶ (C)	STAT 2400, STAT 3400	STAT 3050, STAT 3480, STAT 3800	STAT 3470 ⁶ , STAT 3490 ⁶ , STAT 4100, STAT 4520, STAT 4530
MATH 1500 ¹ (C), MATH 1700 ¹ , MATH 1300 ¹	ACT 2020, ACT 2120, ACC 1100 ^{3, 6} , FIN 2200 ^{3, 6}	ACT 2210, ACT 3130, ACT 3230, ACT 3530, ACT 4000	ACT 4060, ACT 4140, ACT 4340
STAT 1000, STAT 2000 (B)	MATH 2720 ¹ , MATH 2730 ¹	MATH 2300 ⁴	MSCI 2150 ⁵
3 credit hour "W" course (C)	COMP 1260 ⁵		
6 credit hours of electives	3 credit hours of approved electives	3 credit hours of approved electives	3 credit hours of approved electives
30 Hours	30 Hours	30 Hours	30 Hours

NOTES:

¹ MATH 1310 may be taken in place of MATH 1300; MATH 1510, or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place of MATH 1700; MATH 1690 may be taken in place of MATH 1500 and MATH 1700. MATH 2750 may be taken in place of MATH 2720 and MATH 2730.

² It is strongly recommended that students take a minimum of 21 credit hours in Year 3

³ ACC 1100 and FIN 2200 may be taken in Year 2, 3 or 4; however, it is strongly recommended that these two courses be taken in Year 2 or 3. Note that ACC 1100 is a prerequisite for FIN 2200.

⁴ MATH 2352 (6) may be taken in place of MATH 2300 and may be taken in Year 2, 3 or 4

⁵ COMP 1260 and MSCI 2150 may be taken in Year 2, 3 or 4. Note that COMP 1260 is a prerequisite for MSCI 2150.

⁶ A minimum grade of "B" is required in these courses in order to satisfy the SoA, VEE credit / examination exemptions. See the Warren Centre for Actuarial Studies and Research for further information.

(Letters in brackets indicate minimum prerequisite standing for further study.)

Proposed Statistics – Economics Joint Honours requirements:

4.13.5 Statistics - Economics Joint Honours Program

The Department of Statistics along with the Department of Economics (Faculty of Arts) offer a Joint Honours program for students wishing in depth study in Statistics and Economics. For Economics course listings, refer to the Faculty of Arts chapter in the Calendar.

Students will normally take STAT 2000 and STAT 2400 in second year and enter Honours in Year 3.

To enter the Joint Honours Statistics Economics program, the student must have a minimum grade of "B" in **both of ECON 1010 and ECON 1020** (or ECON 1210 and ECON 1220), and STAT 2400, and an average grade of "B" or better with a minimum grade of "C+" in each of MATH 1500 and MATH 1700 or any equivalents and have satisfied the Faculty of Science requirements for entry to the honours program.

UNIVERSITY 1	YEAR 2	YEAR 3	YEAR 4
JOINT HONOURS 120 CREDIT HOURS			
ECON 1010 and ECON 1020 (or ECON 1210 and ECON 1220)	ECON 2700, ECON 2800	ECON 3700, ECON 3800	ECON 4120, ECON 4130
STAT 1000	STAT 2000, STAT 2400	STAT 3470, STAT 3480, STAT 3490, STAT 4100, STAT 4520, STAT 4530, STAT 3400, STAT 3800	STAT 4580
MATH 1300 ¹ , MATH 1500 ^{1,2} , MATH 1700 ^{1,2}	MATH 2202, MATH 2352 (6), MATH 2750 (6)	One of: MATH 3740 (6) or MATH 3760 (6)	
COMP 1010			
9 credit hours of electives including the required "W" course.	3 credit hours of approved Economics electives ³	3 credit hours of approved Economics electives ³	12 credit hours of approved Economics electives ³
30 Hours	30 Hours	30 Hours	30 Hours

NOTES:

¹ MATH 1310 may be taken in place of MATH 1300; MATH 1510, or MATH 1520 may be taken in place of MATH 1500; MATH 1710 may be taken in place MATH 1700.

² The combination of MATH 1500¹ and MATH 1700¹ may be replaced by MATH 1690.

³ Of the 18 credit hours in Economics electives in Years 2, 3 and 4, no more than 6 credit hours may be at the 2000 level or below; ECON 2530 and ECON 3180 are recommended in Year 2 or 3. The normal prerequisite for ECON 3180 is ECON 3170, which will be waived for students in this program who have completed Year 1.

(Letters in brackets indicate minimum prerequisite standing for further study. The number 6 in brackets indicates a 6 credit hour course.)

Collège universitaire de Saint-Boniface

Biology

Introductions:

BIOL 1411 Anatomie du corps humain Cr.Hrs. 3 +3
Discussions sur la micro-anatomie et la macro-anatomie incluant les changements que se produisent de la conception à la vieillesse. Bien que ce cours fasse partie des cours au choix dans un programme en arts ou en sciences, il ne peut rencontrer les exigences de la spécialisation ni du programme de majeure en sciences biologiques. Aucun préalable n'est requis pour ce cours mais le cours de biologie du niveau secondaire est vivement recommandé. On ne peut se faire créditer BIOL 1411 et BIOL 1410.

BIOL 1413 Physiologie du corps humain Cr.Hrs. 3 +3
(ancien ZOOL 1331, 002.133) L'étude des fonctions de tous les systèmes ainsi que les mécanismes de normalisation homéostatique feront partis des thèmes de base étudiés. Bien que ce cours fasse partie des cours au choix dans un programme en arts ou en sciences, il ne peut rencontrer les exigences de la spécialisation ni du programme de majeure en sciences biologiques. On ne peut se faire créditer BIOL 1413 et BIOL 1412, BIOL 2411 (ou équivalent – ZOOL 2530, BIOL 2410, ZOOL 2531, 002.253), BIOL 2421 (ou équivalent – ZOOL 2540, BIOL 2420, ZOOL 2541, 002.254). Préalable : Une note minimale de C dans BIOL 1410 ou 1411 (ZOOL 1320, 002.132)(C); ou une note minimale de C dans BIOL 1030 ou BIOL 1031 ou l'ancien 071.125 (C). Ce préalable ne concerne pas les étudiantes et étudiants dans le programme de Baccalauréat pour les infirmières enregistrés et infirmiers enregistrés.

Spanish

Introductions :

SPAN 3881 Violence, révolutions et dictatures dans la culture Cr.Hrs. 3 +3
Panorama de la culture latino-américaine suivant l'histoire de la violence. On étudiera les manifestations culturelles reliées aux événements qui ont marqué l'histoire de l'Amérique latine: révolutions, guérillas, dictatures. Le contenu du cours se centre sur les manifestations des artistes et d'autres producteurs culturels vis-à-vis de la violence (apologistes ou pacifistes?). Avoir obtenu « C » ou plus dans au moins un cours d'espagnol de niveau 2000 ou le consentement écrit du professeur.

SPAN 3341 Grammaire et syntaxe de l'espagnol Cr.Hrs. 3 +3
Ce cours comprend une étude approfondie et détaillée de la grammaire et de la syntaxe de l'espagnol. On ne peut se faire créditer à la fois le SPAN 3341 et aucun des cours SPAN 3340, l'ancien SPAN 3280 (044.328). Une note de « C » ou plus dans n'importe quel cours d'espagnol de niveau 2000 ou le consentement par écrit du professeur.

Economics

Deletion :

ECON 1201 Introduction aux sciences économiques Cr.Hrs. 6 -6

Introductions :

ECON 1011 Introduction à la microéconomie Cr. Hrs. 3 +3
Étude des principes de base de la microéconomie, plus particulièrement l'offre et la demande, la détermination des prix, les structures de marche, l'allocation des ressources, le comportement des consommateurs et des entreprises ainsi que quelques exemples d'interventions du gouvernement dans les marchés. Des sujets comme l'inégalité économique, l'équité, les effets externes, les biens collectifs ou autres enjeux politiques ou de microéconomie peuvent aussi être traités dans ce cours. L'étudiant(e) qui détient les crédits du ECON 1011 ne peut se faire créditer aucun des cours ECON 1200, (018.120), ECON 1201 (018.120), ECON 1210 (018.121), ECON 1211 (018.121), ECON 1220 (018.122), ECON 1221 (018.122), ou ECON 1010.

ECON 1021 Introduction à la macroéconomie Cr.Hrs. 3 +3
Étude des principes de base de la macroéconomie, plus particulièrement l'offre et la demande agrégées, les indicateurs économique que sont le chômage et l'inflation, le PIB et le niveau de vie, les finances publiques et la politique budgétaire, la monnaie et la politique monétaire. Quelques éléments de l'économie mondiale tels que taux de change et balance des paiements peuvent aussi être traités dans ce cours. L'étudiant(e) qui détient les crédits du ECON 1021 ne peut se faire créditer aucun des cours ECON 1200, (018.120), ECON 1201 (018.120), ECON 1210 (018.121), ECON 1211 (018.121), ECON 1220 (018.122), ECON 1221 (018.122), ou ECON 1020.

Philosophy

Introductions :

PHIL 2741 Éthique et biomédecine Cr.Hrs. 3 +3

Le cours examine quelques-unes des plus importantes questions d'éthique soulevées par les récents développements en biologie et en médecine. Les sujets à couvrir incluent: l'attribution de rares ressources médicinales limitées, la manipulation génétique; l'euthanasie vs la prolongation de la vie; l'avortement et l'infanticide ainsi que l'expérimentation sur des sujets humains. On ne peut se faire créditer à la fois le PHIL 2741 et aucun des cours suivants: PHIL 2290 (015.229) ou PHIL 2531 (015.253) ou PHIL 2740 (015.274). Préalable: avoir complété avec succès 30 heures de crédits universitaires.

PHIL 2751 Éthique et environnement Cr.Hrs. 3 +3

Examen de certaines questions éthiques importantes en rapport avec la pollution de l'environnement et de l'épuisement des ressources. On étudiera (entre autres) : l'idéal des limites de la liberté et de l'environnement, la rareté et l'idéal de la justice, la croissance versus l'état de stabilité économique, les droits des animaux et l'éthique de la survie vs. l'éthique du bien être. On ne peut se faire créditer à la fois le PHIL 2751 et aucun des cours suivants : PHIL 2290 (015.229) ou PHIL 2531 (015.253) ou PHIL 2750 (015.275). Préalable : avoir complété avec succès 30 heures crédits universitaires.

PHIL 2831 Éthique des affaires Cr.Hrs. 3 +3

Le cours explore l'application de la théorie éthique dans les affaires. Les sujets discutés incluent normalement : les théories sur la justice, la responsabilité des corporations, l'éthique dans la publicité, la protection du consommateur et de l'environnement, les préférences à l'embauche. On ne peut se faire créditer à la fois PHIL 2831 et PHIL 2830 (015.283). Préalable : avoir complété avec succès 30 crédits universitaires.

PHIL 2841 Éthique de la guerre et de la paix Cr.Hrs. 3 +3

Une étude des questions éthiques relatives à la guerre et à la recherche de la paix qu'on trouve traitées dans les œuvres des plus grands philosophes et des penseurs politiques et militaires choisis. Les théories morales pertinentes telles que la non-violence, la guerre sainte, la guerre juste, les raisonnements éthiques qui sous-tendent les politiques de dissuasion seront examinées de manière critique dans le contexte historique et contemporain. On ne peut se faire créditer à la fois PHIL 2841 et PHIL 2840 (015.284).

PHIL 2861 Philosophie du droit Cr.Hrs. 3 +3

Une introduction à la philosophie du droit et au système réglementaire en général. Les sujets abordés incluent : le concept de loi (la loi et la religion, la loi naturelle, et les lois des livres), la relation, s'il y a lieu, entre la loi et la moralité et les politiques du droit au Canada et ailleurs. On ne peut se faire créditer à la fois PHIL 2861 et PHIL 2860 (015.286).

PHIL 2871 La philosophie et le droit Cr.Hrs. 3 +3

Examen de la philosophie du droit à partir des questions non traitées du cours PHIL 2861 (015.286). L'étudiant examinera des thèmes tels que : la culpabilité et la responsabilité; les théories du châtement; le droit à la dissidence; le raisonnement légal et l'éthique professionnelle. On ne peut pas se faire créditer à la fois PHIL 2871 et PHIL 2870 (015.287).

Translation

Modifications :

TRAD 3131 Terminologie bilingue et documentation Cr.Hrs. 3

(Ancien 122.313) Initiation aux diverses méthodes d'acquisition de la documentation permettant une application à la traduction : utilisation des encyclopédies, des ouvrages et des revues spécialisées à des fins terminologiques. Apprentissage de l'utilisation des banques de données et établissement de fiches terminologiques. Préalables : une note minimale de C dans TRAD 2101 (122.210) et TRAD 3101 (122.310) ou une note minimale de C dans TRAD 2151 ou l'autorisation écrite du professeur ou de la professeure.

TRAD 3141 Rédaction professionnelle I Cr.Hrs. 3

(Ancien 122.314) Étude comparative de documents professionnels anglais et français afin de mettre en lumière les différences qui peuvent exister dans les méthodes de présentation ou d'expression en anglais et en français. Production de textes professionnels variés (lettres, procès-verbaux, curriculum vitae, etc.) Préalables : une note minimale de C dans TRAD 3101 (122.310) ou une note minimale de C dans TRAD 2151 ou l'autorisation écrite du professeur ou de la professeure.

TRAD 4011 Atelier de traduction professionnelle Cr.Hrs. 3

(Ancien 122.401) Travaux pratiques de traduction en atelier où la simulation des conditions réelles de travail devra permettre d'améliorer sa productivité sous le rapport du temps et de la qualité. Préalable : une note minimale de C dans TRAD 3261 (122.326) ou TRAD 3271 (122.327) et une note minimale de C dans TRAD 3131 ou l'autorisation écrite du professeur ou de la professeure.

TRAD 4101 Mémoire de terminologie Cr.Hrs. 3

(Ancien 122.410) Travail de recherche supervisé en terminologie de l'École de traduction. Recherche thématique sur un sujet et élaboration de fiches terminologiques. Approfondissement de ses compétences dans la manipulation des bases de données terminologiques, leur mise à jour et leur enrichissement. Préalables : une note minimale de B dans TRAD 3131 (122.313) ou TRAD 4061 (122.406).

TRAD 4231 Translation in the Social Sciences Cr.Hrs. 3,

(Ancien 122.423) Révision et pratique des principes de la traduction vers l'anglais à partir de textes français appartenant au domaine des sciences sociales. Établissement de dossiers documentaires et de fiches terminologiques bilingues. Préalable : une note minimale de C dans TRAD 3271 (122.327) et TRAD 3131.

TRAD 4241 Legal Translation Cr.Hrs. 3

(Ancien 122.424) Révision et pratique des principes de la traduction vers l'anglais à partir de textes français appartenant au domaine juridique. Établissement de dossiers documentaires et de fiches terminologiques dans ces domaines. Préalable : une note minimale de C dans TRAD 3271 (122.327) et TRAD 3131.

TRAD 4271 Scientific and Technical Translation (French-English) Cr.Hrs. 3

(Ancien 122.427) Révision et application des principes de la traduction vers l'anglais à partir de textes appartenant aux domaines scientifique et technique. Établissement de dossiers documentaires et terminologiques dans ces domaines. Préalables : une note minimale de C dans TRAD 3271 (122.327) et TRAD 3131.

TRAD 4273 Traduction biomédicale et pharmaceutique Cr.Hrs. 3

Analyse et traduction de différents genres de textes dans le domaine biomédical et pharmaceutique. Accent mis sur les systèmes notionnels, terminologiques et phraséologiques propres au domaine et sur le développement d'une démarche d'exploitation de connaissances spécialisées. Préalables : une note minimale de C dans TRAD 3261 (122.326) et TRAD 3131.

TRAD 4281 Adaptation publicitaire Cr.Hrs. 3

(Ancien 122.436) Révision et application des principes de la traduction vers le français à partir de textes pragmatiques anglais appartenant à divers domaines de spécialisation. Préalables : une note minimale de C dans TRAD 3261 (122.326) ou TRAD 3271 (122.327).

TRAD 4361 Traduction spécialisée (anglais-français) Cr.Hrs. 3

(Ancien 122.436) Révision et application des principes de la traduction vers le français à partir de textes pragmatiques anglais appartenant à divers domaines de spécialisation. Préalables : une note minimale de C dans TRAD 3261 (122.326) et TRAD 3131.

TRAD 4371 Specialized Translation (French-English) Cr.Hrs. 3

(Ancien 122.437) Révision et application des principes de la traduction vers l'anglais de textes pragmatiques français appartenant à divers domaines de spécialisation. Préalables : une note minimale de C dans TRAD 3271 (122.327) et TRAD 3131.

TRAD 4381 Traduction en sciences sociales Cr.Hrs. 3

(Ancien 122.438) Familiarisation avec le langage propre aux sciences sociales et qui tient compte de méthodes de recherche et d'analyse bien définies, tant en anglais qu'en français et auquel on aura recours chaque fois que le texte de départ l'exigera, tout en enrichissant sa culture générale. Préalables : une note minimale de C dans TRAD 3261 (122.326) et TRAD 3131.

TRAD 4391 Traduction juridique Cr.Hrs. 3

Révision et application des principes de la traduction vers le français de textes juridiques anglais appartenant à divers aspects du droit : textes législatifs, règlements, textes de jurisprudence, de doctrine, contrats. Préalables : une note minimale de C dans TRAD 3261 (122.326) et TRAD 3131.

TRAD 4411 Traduction scientifique et technique Cr.Hrs. 3

(Ancien 122.441) Révision et application des principes de la traduction vers le français à partir de textes appartenant aux domaines scientifique et technique. Établissement de dossiers documentaires et terminologiques dans ces domaines. Préalables : une note minimale de C dans TRAD 3261 (122.326) et TRAD 3131.

TRAD 4421 Traduction économique et commerciale Cr.Hrs. 3

(Ancien 122.442) Révision et application des principes de la traduction vers le français de textes pragmatiques spécialisés dans les domaines du commerce et de l'économie. Établissement de lexiques bilingues et enrichissement des connaissances dans ce domaine de spécialisation. Pratique de rédaction dans le style commercial. Préalables : une note minimale de C dans TRAD 3261 (122.326) et TRAD 3131.

TRAD 4501 Initiation à la localisation Cr.Hrs. 3

(Ancien 122.450) Utilisation de divers outils informatiques indispensables à la localisation et à l'adaptation de logiciels pour des publics très variés. Réflexion sur le rôle du traducteur au sein

de l'équipe linguistique et technique. Préalables : une note minimale de C dans TRAD 2111 (122.211) et dans l'un ou l'autre de TRAD 2361 (122.326) ou TRAD 3271 (122.327) ou l'autorisation du professeur ou de la professeure.

Report of the Executive Committee of the Faculty of Graduate Studies on Course and Curriculum Changes

Preamble

1. The Faculty of Graduate Studies has responsibility for all matters relating to the submission of graduate course, curriculum and program changes. Recommendations for new programs or program changes are submitted by the Faculty Council of Graduate Studies for the approval of Senate.
2. In October 2007, the Faculty of Graduate Studies approved a process of *Streamlining Course Introductions, Modifications, & Deletions* which allows the Executive Committee to approve these changes in lieu of Faculty Council when the courses are not associated with a new program or program changes.
3. The Faculty of Graduate Studies Executive Committee met on the above date to consider proposals from the Faculty of Kinesiology & Recreation Management, Dept. of Economics, Dept. of Physiology, and Dept. of Curriculum, Teaching & Learning.

Observations

1. The Faculty of Kinesiology & Recreation Management proposes the deletion of two courses, **REC 7080 Directed Study in Recreation & Leisure Studies (3)** and **PHED 7080 Individual Study in Selected Area (3)**, and the introduction of one course, **PERS 7080 Directed Study in Kinesiology and Recreation (3)**. PERS 7080 will combine the course offerings from the two deletions to allow for opportunities to conduct directed studies in both Recreation and Kinesiology.
2. The Dept. of Economics, Faculty of Arts proposes the modification of two courses, **ECON 7040 Topics in Applied Microeconomics I (3)** and **ECON 7050 Topics in Applied Microeconomics II (3)** to update the course prerequisites.
3. The Dept. of Physiology, Faculty of Medicine proposes the deletion of three courses, **PHGY 7130 Gen Resp Physio (3)**, **PHGY 7220 Perinatal Physiology (3)**, and **PHGY 7280 Neurological Sciences (3)** as the courses have not been offered in many years.
4. The Dept. of Curriculum, Teaching & Learning, Faculty of Education proposes the modification of one course, **EDUB 7330 Inquiry in Curriculum and Instruction (3)** to remove the course's prerequisites.

Comments of the Senate Executive Committee:
The Senate Executive Committee endorses the report to Senate.

Recommendations

The Executive Committee recommends THAT: the course and program changes from the units listed below be approved by Senate:

Faculty of Kinesiology & Recreation Management

Dept. of Economics

Dept. of Physiology

Dept. of Curriculum, Teaching & Learning

Respectfully submitted,

Dean J. Doering, Chair
Graduate Studies Executive Committee

Faculty of Kinesiology & Recreation Management

Course Deletions

REC 7080 Directed Study in Recreation & Leisure Studies (3)

PHED 7080 Individual Study in Selected Area (3)

Course Introduction

PERS 7080 Directed Study in Kinesiology and Recreation +3

Provides opportunities for in-depth individualized study within a specific area of interest. Can be completed twice (different topics) for a maximum of 6 credits. Only 3 credits may count towards the minimum requirement of 12 credits.

NET CHANGE IN CREDIT HOURS: (3)

Dept. of Economics

Course modifications

ECON 7040 Topics in Applied Microeconomics I 3

Advanced study in a selected topic in applied microeconomics. Topics covered in rotation include, but are not limited to, labour economics, health economics, public finance, industrial organization, international trade, environmental economics, evaluation of public policy, production economics and applied game theory. Prerequisite: ECON 7722 or the former ECON 7720 (018.772).

ECON 7050 Topics in Applied Microeconomics II

3

Advanced study in a selected topic in applied microeconomics. Topics to be covered in rotation include, but are not limited to, labour economics, health economics, public finance, industrial organization, international trade, environmental economics, evaluation of public policy, production economics and applied game theory. Prerequisite: ECON 7722 or the former ECON 7720 (018.772).

NET CHANGE IN CREDIT HOURS:

0

Dept. of Physiology

Course deletions

PHGY 7130 Gen Resp Physio

(3)

PHGY 7220 Perinatal Physiology

(3)

PHGY 7280 Neurological Sciences

(3)

NET CHANGE IN CREDIT HOURS:

(9)

Dept. of Curriculum, Teaching & Learning

Course modification

EDUB 7330 Inquiry in Curriculum and Instruction

3

An examination of the issues involved in critiquing and synthesizing inquiry in curriculum and instruction studies in the humanities and social sciences. The course will also introduce students to the variety of ways in which inquiry may be conducted in instructional settings and will focus on how the research on curriculum and instruction can be validly synthesized across studies. Not to be held with the former 063.754.

NET CHANGE IN CREDIT HOURS:

0

Report of the Executive Committee of the Faculty of Graduate Studies on Course and Curriculum Changes

Preamble

1. The Faculty of Graduate Studies has responsibility for all matters relating to the submission of graduate course, curriculum and program changes. Recommendations for new programs or program changes are submitted by the Faculty Council of Graduate Studies for the approval of Senate.
2. In October 2007, the Faculty of Graduate Studies approved a process of *Streamlining Course Introductions, Modifications, & Deletions* which allows the Executive Committee to approve these changes in lieu of Faculty Council when the courses are not associated with a new program or program changes.
3. The Faculty of Graduate Studies Executive Committee met on the above date to consider proposals from the Faculty of Graduate Studies, Dept. of Microbiology, and Dept. of Environment & Geography.

Observations

1. The Faculty of Graduate Studies proposes the introduction of one course, **GRAD 7300 Ethics Tutorial (online) Human Research Protection Program (CHRPP) (0)** to offer researchers and students of all disciplines an opportunity to explore the principles of safe and ethical conduct of research with human participants. Expected enrollment includes all students submitting for Research Ethics Board (REB) review of projects involving human participants. It is anticipated that in the future completion of this course will be required for REB submission. A certificate is printable upon completion of the online tutorial.
2. The Dept. of Microbiology, Faculty of Science, proposes the introduction of one course, **MBIO 7200 Macromolecular Structural Analysis (3)**, to allow students with a background in either biological sciences or chemistry to understand the basic principles of protein X-ray crystallography and its application to the analysis of protein structure and function. Recent trends in the field will be examined.
3. The Dept. of Environment & Geography, Clayton H. Riddell Faculty of Environment, Earth, and Resources proposes the deletion of three courses, **GEOG 7220 Tourism and Recreation (3)**, **GEOG 7430 Modeling the Atmosphere and Physical Climate (3)** and **GEOG 7490 Natural Hazards and Disasters (3)** and the introduction of one course, **GEOG 7330 Concepts in Atmospheric Modeling**. GEOG 7220 and GEOG 7490 are no longer being taught and GEOG 7330 replaces GEOG 7430 due to updates and changes in course content.

Comments of the Senate Executive Committee:
The Senate Executive Committee endorses the report to Senate.

Recommendations

The Executive Committee recommends THAT: the course and program changes from the units listed below be approved by Senate:

Faculty of Graduate Studies
Dept. of Microbiology
Dept. of Environment & Geography

Respectfully submitted,

Dean J. Doering, Chair
Graduate Studies Executive Committee

Faculty of Graduate Studies

Course Introduction

GRAD 7300 Ethics Tutorial (online) – Human Research Protection Program (CHRPP) (0)

Applicable to all disciplines of research involving humans. Offers a review of the principles of human research participant protection. Online tutorial with no pre- or co-requisites. Certificate available to print upon completion. Course graded pass/fail.

NET CHANGE IN CREDIT HOURS: **0**

Dept. of Microbiology

Course introduction

MBIO 7200 Macromolecular Structural Analysis **3**

This course introduces the principles of X-ray crystallography as applied to the study of protein and nucleic acid structure. Protein crystallization and practical aspects of X-ray diffraction, structure determination and analysis are covered. This course is suitable for students with a background in microbiology, biochemistry or chemistry. Inquire at the department for availability.

NET CHANGE IN CREDIT HOURS: **+3**

Dept. of Environment & Geography

Course deletions

GEOG 7220 Tourism and Recreation -3

GEOG 7430 Modeling the Atmosphere and Physical Climate -3

GEOG 7490 Natural Hazards and Disasters -3

Course introduction

GEOG 7330 Concepts in Atmospheric Modeling 3

This course will primarily focus on numerical modeling applications and techniques of the Earth's atmosphere with an emphasis on weather prediction. This includes understanding basic modeling terminology, numerical schemes, structure of models, types of models, what is required to run a model, and an introduction to data assimilation and ensemble techniques to weather prediction. Prerequisite: permission of instructor.

NET CHANGE IN CREDIT HOURS -6

Report of the Executive Committee of the Faculty of Graduate Studies on Course and Curriculum Changes

Preamble

1. The Faculty of Graduate Studies has responsibility for all matters relating to the submission of graduate course, curriculum and program changes. Recommendations for new programs or changes are submitted by the Faculty Council of Graduate Studies for the approval of Senate.
2. In October 2007, the Faculty of Graduate Studies approved a process of *Streamlining Course Introductions, Modifications, & Deletions* which allows the Executive Committee to approve these changes in lieu of Faculty Council when the courses are not associated with a new program or program changes.
3. The Faculty of Graduate Studies Executive Committee met on the above date to consider the Senate-requested Deletion of Lapsed Courses. (See **attach. 1**)

Observations

1. A list of courses not offered in the past five years was compiled by the Registrar's Office and distributed to faculties by the Office of The University Secretary on July 14, 2010.
2. Approx. 144 graduate level courses (7000 or higher) were identified by the Registrar's Office as not having been offered in the past five years.
3. It was noted that units identified a number of reasons for wishing to keep courses on the list active:
 - Due to the research interests/areas of existing or newly hired staff, several courses will be added to the teaching program in the near future;
 - Due to prospective program changes, it would be premature to delete several courses;
 - Due to upcoming program reviews, it would be premature to delete several courses; or
 - Courses offered in rotation due to varying specializations/teaching loads.
4. Some units commented that the list provided by the Registrar's Office contained courses that had already been deleted or were currently in the process of being deleted.
5. The courses of those unit(s) that did not respond to the distribution of the list were deleted.

Recommendations

The Executive Committee recommends THAT: the Deletion of Lapsed Courses from the units listed below be approved by Senate:

Faculty of Agric. and Food Sci.
Faculty of Arts
Faculty of Education
Faculty of Env., Earth, & Res
Faculty of Graduate Studies
Faculty of Human Ecology
Faculty of Management
Faculty of Medicine
Faculty of Music
Faculty of Science

Course Deletions:

Faculty of Agric. and Food Sci.

NET CHANGE IN COURSES: -1

Faculty of Arts

NET CHANGE IN COURSES: -14

Faculty of Education

NET CHANGE IN COURSES: -4

Faculty of Env., Earth, & Res

NET CHANGE IN COURSES: -3

Faculty of Graduate Studies

NET CHANGE IN COURSES: -1

Faculty of Human Ecology

NET CHANGE IN COURSES: -2

Faculty of Management

NET CHANGE IN COURSES: -6

Faculty of Medicine

NET CHANGE IN COURSES: 0

Faculty of Music

NET CHANGE IN COURSES: 0

Faculty of Science

NET CHANGE IN COURSES: -5

Respectfully submitted,

Dr. John (Jay) Doering, Chair
Faculty of Graduate Studies Executive Committee

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Lapsed Courses - Proposed for Deletion
Oct 2010

Faculty of Agric.and Food Sci.

Agribusiness and Agric. Econ.	ABIZ 7420	Advanced Seminar in Agricultural Trade and Economic Development
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Faculty of Arts

Economics	ECON 7440	Renewable Resource Economics
French, Spanish and Italian	FREN 7880	Littérature épistolaire du XVIIe siècle
German and Slavic Studies	RUSN 6010	Basic Russian for Scientists
	UKRN 7300	Selected Topics in Ukrainian Literature
	UKRN 7360	Seminar in Contemporary Ukrainian Literature
	UKRN 7500	Studies in Ukrainian Modernism
	UKRN 7530	Special Topics in Ukrainian Studies
Psychology	PSYC 7690	Seminar in Physiological Psychology
	PSYC 8060	Advanced Adolescent Development
	PSYC 8350	Developmental Psychobiology
Sociology	SOC 7380	Issues in Aging

Faculty of Education

Curriculum, Teaching & Learning	EDUB 7320	Twentieth Century Curriculum Development History and Biography
	EDUB 7980	Supervision of Educational Programs
Ed. Admin., Fndns. and Psych.	EDUA 7260	Education and Development
	EDUA 7720	Psychology of Classroom Learning
	EDUA 7730	Psychological Perspectives in Early Education

Faculty of Env, Earth, & Res

Environment and Geography	GEOG 7160	Hydroclimatology
	GEOG 7280	Geographic Approaches to Land Resource Conflict Resolution
	GEOG 7490	Natural Hazards and Disasters

Faculty of Graduate Studies

	GRTR 7000 --100	Graduate Term Registration
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Faculty of Human Ecology

Family Social Sciences	FMLY 7190	Canadian Consumer Protection and Policy
	FMLY 7210	The Family and Decision Making

Faculty of Management

Actuarial Studies and Research	ACT 7010	Actuarial Analysis
	ACT 7040	Quantitative Analysis
	ACT 7530	Section of Risks
	ACT 7550	Construction of Mortality and Other Tables
	ACT 7560	Mathematical Theory of Risk
Business Administration	GMGT 7480	Public Sector Decision Making

Faculty of Science

Computer Science	COMP 7580	Advanced Topics in Computer Science 2
	COMP 7790	Advanced Topics in Mathematical Foundations Computer Science
Physics and Astronomy	PHYS 7520	Condensed Matter Physics 3
	PHYS 7610	Experimental Methods in Materials Science
	PHYS 7620	Experimental Methods in Physics

REPORT OF THE SENATE COMMITTEE ON AWARDS

Preamble

Terms of reference for the Senate Committee on Awards include the following responsibility:

On behalf of Senate, to approve and inform Senate of all new offers and amended offers of awards that meet the published guidelines presented to Senate on November 3, 1999, and as thereafter amended by Senate. Where, in the opinion of the Committee, acceptance is recommended for new offers and amended offers which do not meet the published guidelines or which otherwise appear to be discriminatory under the policy on the *Non-Acceptance of Discriminatory Awards*, such offers shall be submitted to Senate for approval. (Senate, October 7, 2009)

Observations

At its meeting of October 18, 2010, the Senate Committee on Awards approved six new offers, six amended offers, and the withdrawal of eleven offers, as set out in Appendix A of the *Report of the Senate Committee on Awards* (dated October 18, 2010).

Recommendations

On behalf of Senate, the Senate Committee on Awards recommends that the Board of Governors approve six new offers, six amended offers, and the withdrawal of eleven offers, as set out in Appendix A of the *Report of the Senate Committee on Awards* (dated October 18, 2010). These award decisions comply with the published guidelines of November 3, 1999, and are reported to Senate for information.

Respectfully submitted,

Dr. Philip Hultin
Chair, Senate Committee on Awards

Appendix A
MEETING OF THE SENATE COMMITTEE ON AWARDS
October 18, 2010

1. NEW OFFERS

Shirley Ann Akins Bursary

Shirley Ann Akins (B.Sc./64) has established an endowment fund at the University of Manitoba, with a bequest of \$45,444.85 in 2010. The purpose of the fund is to provide a renewable bursary for students in the Department of Biological Sciences. The available annual interest from the fund will be used to offer one bursary to an undergraduate student who:

- (1) is enrolled full-time in the Faculty of Science, in Year 3 of any B.Sc. degree program delivered by the Department of Biological Sciences;
- (2) has achieved a minimum degree grade point average of 2.5;
- (3) has demonstrated financial need on a University of Manitoba bursary application form.

The award is renewable in the fourth year of study at the University of Manitoba provided that the recipient:

- (1) is registered full-time in the Faculty of Science, in Year 4 of any B.Sc. degree program delivered by the Department of Biological Sciences;
- (2) has achieved a minimum sessional grade point average of 2.5;
- (3) continues to demonstrate financial need on the standard University of Manitoba bursary application form.

The bursary will normally be offered biennially. In the event that a recipient does not qualify for continuation of the bursary, the University may select another qualified student to receive the funds that would have been awarded to the initial recipient.

The selection committee shall be named by the Head of the Department of Biological Sciences (or designate).

The Board of Governors of the University of Manitoba has the right to modify the terms of this award if, because of changed conditions, it becomes necessary to do so. Such modification shall conform as closely as possible to the expressed intention of the donor in establishing the award.

Shirley Ann Akins Undergraduate Thesis Prize

Shirley Ann Akins (B.Sc./64) has established an endowment fund at the University of Manitoba, with a bequest of \$37,182.50 in 2010. The purpose of the fund is to provide support for students in the Department of Biological Sciences who undertake an Honours thesis project and to offset costs related to the research project. The available annual interest from the fund will be used to offer one prize to an undergraduate student who:

- (1) has completed Year 3 of a Bachelor of Science (Honours) degree, in any theme of study offered by the Department of Biological Sciences;
- (2) has achieved a minimum degree grade point average of 3.5;

- (3) has submitted the strongest research proposal for an Honours thesis project, as determined by the selection committee.

Candidates will be required to submit an application that includes a research proposal (maximum 500 words) and a budget listing expected research-related expenses, and a letter of support from their thesis supervisor.

The selection committee will be the Honours Committee of the Department of Biological Sciences.

The Board of Governors of the University of Manitoba has the right to modify the terms of this award if, because of changed conditions, it becomes necessary to do so. Such modification shall conform as closely as possible to the expressed intention of the donor in establishing the award.

Canada-Wide Science Fair / University of Manitoba Entrance Scholarship

The Office of the Vice-President (Research) at the University of Manitoba offers a renewable entrance scholarship for students who have been awarded a Gold Medal for a senior project at the Youth Science Canada - Canada-Wide Science Fair. Each year, a maximum of twenty scholarships, valued at \$5,000 each, will be offered to undergraduate students who:

- (1) have been awarded a Gold Medal for a senior project in any division of the Youth Science Canada – Canada-Wide Science Fair within the previous two years;
- (2) qualify for admission to University 1 or any direct entry program;
- (3) subsequently enrol full-time (minimum 24 credit hours) in University 1 or any direct entry program.

The award is renewable, at the same value, in the second year of study provided that the recipient:

- (1) continues to be enrolled full-time (minimum 24 credit hours) in any faculty or school, excepting the Faculty of Graduate Studies;
- (2) has achieved a minimum degree grade point average of 3.0.

A student who has been awarded more than one Gold Medal for a senior project (i.e. in his or her grade 11 and grade 12 years) will be offered only one renewable Canada-Wide Science Fair / University of Manitoba Entrance Scholarship.

The Canada-Wide Science Fair / University of Manitoba Entrance Scholarship may not be held with any other University of Manitoba entrance scholarship excepting the Chown Centennial Scholarship and the Advanced Placement and International Baccalaureate Scholarship Enhancement. A recipient who is also named to receive a University of Manitoba renewable entrance award may hold that award, in name only, in the first and second years of study. He/she will be entitled to hold the renewable entrance award in the third and fourth years of study, provided that he/she meets the renewal criteria for that award.

The Office of the Vice-President (Research) will notify Financial Aid and Awards of the recipients each year.

Lamari Travel Award

An endowment fund has been established at the University of Manitoba as a tribute to Dr. Lakhdar Lamari's personal qualities and career accomplishments. Dr. Lamari joined the Department of Plant Science in 1988 as a Post Doctoral Fellow and subsequently served as a faculty member from 1990 until 2009. The available annual interest from the fund will be used to offer one or more awards, with a maximum value to be set by the Head of the Department of Plant Science, on the recommendation

of the Plant Science Graduate Studies Committee. The Lamari Travel Award will be offered to graduate students who:

- (1) have completed at least one year of an M.Sc. or Ph.D. program delivered by the Department of Plant Science;
- (2) have achieved a minimum degree grade point average of 3.0 (or equivalent) based on the last 60 credit hours of study;
- (3) will be attending a scientific meeting in a plant science related area and will be presenting the results of their research at the meeting (poster or oral presentation);
- (4) have demonstrated research ability based on the abstract submitted and the proposed research results to be presented at the meeting.

Applications will be available annually from the Department of Plant Science and must be submitted to the Associate Head of the Department of Plant Science by the advertised deadline. Funding must be used within the 12 month period following the date that the award recipients are announced. Recipients graduating within the 12 month period following the date of the award offer must use the funding no later than six months from the date of convocation.

Recipients may not hold more than one of the Lamari Travel Award, the Morrison Travel Award, or the Helgason Travel Award in the same calendar year.

Selection of the recipients will be based on: 1) academic performance; 2) comments from letters of recommendation; 3) the quality of the abstract submitted and of the proposed research results to be presented; 4) the potential value of the meeting to the student's development.

The award recipient will submit receipts for travel, registration, hotel and food expenses (based on current University of Manitoba *per diem* rates). Expenses will be reimbursed up to the current maximum value of the award.

The Dean of the Faculty of Graduate Studies will ask the Chair of the Awards Committee of the Department of Plant Science to convene the selection committee for this award.

The Board of Governors of the University of Manitoba has the right to modify the terms of this award if, because of changed conditions, it becomes necessary to do so. Such modification shall conform as closely as possible to the expressed intention of the donor in establishing the award.

Burton Allen (B.A.) Robinson Athletic Scholarship

Mr. Burton (B.A.) Robinson has bequeathed \$79,045.68 to the University of Manitoba, in 2009. His gift has been used to establish an endowment fund for the Burton Allen (B.A.) Robinson Athletic Scholarship. The Manitoba Scholarship and Bursary Initiative has made a contribution to the fund. B.A. was an avid football fan and a good friend to the Bison Football program. His generosity over the years helped not only the football program but all varsity sports at the University. The Scholarship honours his long-time love of sport. The available annual interest from the fund will normally be used to offer two scholarships of equal value, with a maximum value equal to a recipient's full tuition and ancillary fees.* One scholarship will be offered to a member of the football team and one to a student athlete participating in another interuniversity sport.** The scholarships will be offered to students who:

- (1) are Canadian citizens or permanent residents;
- (2) are eligible to compete in Canadian Interuniversity Sport;
- (3) have completed at least one year of full-time study at the University and, in the previous academic session, have completed at least 18 credit hours;

- (4) have achieved a minimum sessional grade point average of 2.0;
- (5) in the next ensuing academic session are enrolled full-time in any Faculty or School;
- (6) have demonstrated athletic ability in their sport.

*In any given year that there is additional revenue available, one or more additional scholarships, with a maximum value equal to a recipient's full tuition and ancillary fees, may be offered to students in the same sport designated to receive the second scholarship allocation that year.

**The second scholarship will be offered each year to a different sport, according to the following cycle: track and field, women's soccer, men's volleyball, women's volleyball, men's hockey, women's hockey, cross country, men's basketball, women's basketball, and swimming.

The selection committee shall be named by the Dean of the Faculty of Kinesiology and Recreation Management (or designate).

The terms of this award will be reviewed annually against the Canadian Interuniversity Sport (CIS) criteria governing "University Academic Scholarships with an Athletic Component", currently numbered 50.10.3.5 in the CIS Operations Manual.

The Board of Governors of the University of Manitoba has the right to modify the terms of this award if, because of changed conditions, it becomes necessary to do so. Such modification shall conform as closely as possible to the expressed intention of the donor in establishing the award.

Walker Wood Foundation Bursary for Science

The Walker Wood Foundation provides an annual contribution of \$4,000 to offer a bursary for undergraduate students enrolled in the Faculty of Science. The donor has agreed to fund the bursary for a term of three years, beginning in the 2010-2011 academic session. One bursary will be offered to an undergraduate student who:

- (1) is a Canadian citizen who has graduated from a high school in Manitoba;
- (2) is enrolled full-time in the Faculty of Science, in the second year of any Major or Honours degree program;
- (3) has achieved a minimum degree grade point average of 3.0;
- (4) has displayed leadership, community and/or extracurricular involvement;
- (5) has demonstrated financial need on the standard University of Manitoba bursary application form.

The Walker Wood Foundation Bursary for Science is renewable in each of the third and fourth years of study provided the recipient:

- (1) continues to be enrolled full-time in the Faculty of Science, in the third or fourth year of any Major or Honours degree program;
- (2) has achieved a minimum sessional grade point average of 3.0;
- (3) continues to demonstrate financial need on the standard University of Manitoba bursary application form.

The bursary cannot be divided.

In the event that there is no qualified applicant, the selection committee will have the discretion to offer the award to a student from the general pool of bursary applicants who meets criteria (1) through (3) and (5), as set out in the first paragraph.

In the event that a recipient does not qualify for continuation of the award, the University may offer that bursary to the next qualified student (i.e. from the original group of applicants), in the same year of study, either as a renewable bursary for a student in the third and fourth years of study (provided that the recipient meets the renewal criteria) or as a one-time bursary for a student in the fourth year of study.

In addition to the standard University of Manitoba bursary application form, candidates must submit a supplementary application identifying the high school from which they graduated, and including a statement (maximum one page) in which they (a) outline specific experiences that speak to their leadership abilities and (b) describe their community and/or extracurricular involvement.

The selection committee will be named by the Dean of the Faculty of Science (or designate).

2. AMENDMENTS

Aboriginal Issues Press Scholarships

Two changes were made to the terms of reference for the Aboriginal Issues Press Scholarships:

- In criterion (4), ‘cumulative grade point average’ was updated to ‘degree grade point average.’
- The description of the application materials has been revised to read: “Applicants will be required to submit a one-page statement explaining how their research relates to Aboriginal issues and how this research will be or has been disseminated in order to be considered for this award.”

Lee Dunlop Anderson Centennial Bursary

The value of the initial gift made to establish the endowment fund was corrected from: \$20,792 to: \$10,507.80 in the opening paragraph of the terms of reference for the Lee Dunlop Anderson Centennial Bursary.

William G. Eamer Co-op Program Scholarship

The terms of reference for the William G. Eamer Co-op Program Scholarship were amended to increase the number of scholarships from: one to: two. A number of editorial changes were made.

William G. Eamer Professional Scholarship

The terms of reference for the William G. Eamer Professional Scholarship were amended to increase the number of scholarships from: two to: three.

Helgason Travel Award for Graduate Students in Plant Science

The follow revisions were made to the terms of reference for the Helgason Travel Award for Graduate Students in Plant Science.

- A statement was added to clarify that the available annual interest from the fund will be used to offer one or more travel awards.
- The terms now set out a required degree grade point average of at least 3.0 (or equivalent) based on the last 60 credit hours of study.
- A condition that recipients must have demonstrated research ability based on the abstract submitted and the proposed research results to be presented at a scientific meeting has been made explicit.

- An application deadline and the date by which recipients were to have been selected were deleted.
- The description of the selection committee was changed to: The Dean of the Faculty of Graduate Studies will ask the Chair of the Awards Committee of the Department of Plant Science to convene the selection committee for this award, from: The selection committee shall be named by the Head of the Department of Plant Science and shall be chaired by the Associate Head of that department.
- A number of editorial changes were made.

Morrison Travel Award for Graduate Students in Plant Science

The follow revisions were made to the terms of reference for the Morrison Travel Award for Graduate Students in Plant Science.

- A statement was added to clarify that the available annual interest from the fund will be used to offer one or more travel awards.
- A required degree grade point average of at least 3.0 (or equivalent) based on the last 60 credit hours of study was added.
- A condition that recipients must have demonstrated research ability based on the abstract submitted and the proposed research results to be presented at a scientific meeting has been made explicit.
- A restriction that recipients may not hold both the Morrison Travel Award and the Helgason Travel Award has been broadened and now reads: "Recipients may not hold more than one of the Morrison Travel Award, the Lamari Travel Award, or the Helgason Travel Award in the same calendar year."
- An application deadline and the date by which recipients were to have been selected were deleted.
- The following description of the selection committee was added to the terms: The Dean of the Faculty of Graduate Studies will ask the Chair of the Awards Committee of the Department of Plant Science to convene the selection committee for this award.
- A number of editorial changes were made.

3. WITHDRAWALS

CMA – Manitoba Award in Cost Accounting

CMA – Manitoba Award in Managerial Accounting

CMA – Manitoba Award in Advanced Managerial Accounting

The CMA – Manitoba Award in Cost Accounting, the CMA – Manitoba Award in Managerial Accounting, and the CMA – Manitoba Award in Advanced Managerial Accounting, annually funded awards for students in the I.H. Asper School of Business, were withdrawn at the request of the donor.

Freshwater Institute Silver Anniversary Fund

Terms of reference for the Freshwater Institute Silver Anniversary Fund were withdrawn at the request of the donor. Monies from the endowment fund, which had been used to support a travel award for graduate students who had a supervisor at the Freshwater Institute, have been transferred to a general trust fund for graduate fellowships (FOP 623057 307204 5000).

Heinz Jordan Prize in Painting

Heinz Jordan Prize in Printmaking

The Heinz Jordan Prize in Painting and the Heinz Jordan Prize in Printmaking, annually funded awards for students in the School of Art, were withdrawn at the request of the donor.

Manitoba Hatchery Association Scholarship

The Manitoba Hatchery Association Scholarship, an annually funded scholarship for an undergraduate student in the Bachelor of Science in Agriculture (Animal Science), was withdrawn, as the Association no longer exists.

North Winnipeg Credit Union Awards

The North Winnipeg Credit Union Awards, an annually funded prize for graduate and advanced undergraduate students pursuing studies in the area of Ukrainian Studies, was withdrawn at the request of the donor.

Prize in Manitoba Politics and Voting Behaviour

The Prize in Manitoba Politics and Voting Behaviour, an annually funded award for the student who achieves highest standing in either Manitoba Politics and Voting Behaviour or Manitoba History, was withdrawn at the request of the donor.

Sicilian Club of Winnipeg Scholarship

The Sicilian Club of Winnipeg Scholarship, an annually funded award for students who have completed at least one Italian language course, was withdrawn at the request of the donor. The award has not been offered for several years.

Walker Wood Foundation Bursary

Terms of reference for the Walker Wood Foundation Bursary, for students in the Physician Assistant Education Program were withdrawn. The award was established for a term of two years, which has now come to a close.

In Memoriam: Dr. Robert J. (Bob) Parker, Professor Emeritus

Faculty of Agricultural and Food Sciences
Department of Animal Science

It is with great sadness that we announce the passing of Dr. R. J. Parker on October 30, 2010.

Dr. Parker first joined the Department of Animal Science in 1959 as a Research Officer shortly after receiving a B.Sc. Agriculture (1958) from the University of Glasgow, a Scottish Diploma in Dairy from the West of Scotland Agriculture College and a post Graduate Diploma in Agriculture from the University of Reading. In 1961 Dr. Parker enrolled in the M.S.A. (Animal Breeding) program at the University of Toronto (Guelph) receiving his M.S.A. in 1962 followed by a PhD in Animal Genetics from Michigan State University (1967). In 1966 Dr. Parker was appointed as an Assistant Professor in the Department of Animal Science, University of Manitoba and quickly moved through the ranks to Full Professor.

As an Academic Dr. Parker always maintained that the primary function at the University is teaching and that the focus should be on student education; facilitating their learning and developing their problem solving skills. He thoroughly enjoyed interacting with students, challenging them in their learning process and making the process enjoyable. He always found time for students outside the classroom, tutoring, challenging and affirming progress. At the graduate level he would start every lecture with a "Thought for the day" which was relevant to the subject matter to be presented in that class.

The quality of education offered to our students in the Faculty of Agricultural and Food Sciences was of utmost importance to Dr. Parker and over an 18-month period (1992/1994) he chaired a curriculum Task Force (weekly meetings) that revised the curriculum for the Faculty, (passed by Senate December 7, 1994). The new curriculum was applauded from within and outside the University as being forward – looking, offering progressive programs that eliminated Departmental boundaries and focused on desired learning outcomes for the students that would meet both student and employee needs.

Dr. Parker maintained a strong research program for most of his academic career, securing funding from NRC/NSERC, Agriculture Canada and other sources, graduating 10 M.Sc. and 7 Ph.D. students and publishing 78 peer reviewed articles of which many were invited papers. His involvement in training and mentoring graduate students was very much on a one-on-one basis. One to two hours each week he met with each one of his students independently where they discussed the student's progress and where he challenged each student to think through their research problem and find the solution. He excelled in fostering students' critical thinking, always pushing the boundary.

Dr. Parker was a very active participant in University and community life. Throughout his tenure he served on 13-University committees; 30-Faculty of Agricultural and Food Sciences committees; 17-Department of Animal Science committees, 3-UMFA committees, 5-Canadian Society of Animal Science Committees, and 25-external research and industry committees. He was always willing to serve and often accepted a leadership role. From 1986 to his retirement Dr. Parker was active as an administrator: Associate Head of Animal Science (4 yrs), Acting Head and Head of Animal Science (6 yrs), Associate Dean Research (4 yrs) and at the same time Director of the Glenlea Research Station (10 yrs). Dr. Parker's activities and decisions as administrator were based on a set of guiding principles that included openness, integrity, fairness, equity, discretion, and compassion. Though he always acted for the common good of the Department/Faculty/University, he never lost sight of the human element involved

in and affected by the decisions he made. In times of fiscal constraints when tough decisions had to be made, he carefully considered all implications to programs and people and chose the least damaging. He was well respected by his peers and received the Administrator of the Year Award in 1995.

Although Dr. Parker won numerous recognitions and awards throughout his career, two need special mention. Upon his retirement in 1997 Dr. Parker received the title Professor Emeritus and his colleagues and friends established the Robert J. Parker Graduate Fellowship in Animal Science.

Dr. Parker passed away on Saturday October 30, 2010 surrounded by his loving wife Margaret and family. He will be sadly missed, but dearly remembered by family, friends and colleagues for his sound advice, sense of humor, his warm laughter and his passion for life.

PRESIDENT'S REPORT: December 1, 2010

GENERAL

The Association of Universities and Colleges of Canada (AUCC) organized a week-long mission to India in early November, involving the largest delegation of Canadian university and college presidents ever to travel abroad. Its intent was to solidify existing relationships, forge new exchange and research partnerships and raise the profile of Canadian universities in India, the world's second most populous country and included a series of targeted meetings with Indian educators, government officials and business leaders. The University of Manitoba's already strong partnerships in India were enhanced through the signing of a Memorandum of Understanding (MoU) with the Indian Institute of Crop Processing Technology (IICPT) and the Ministry of Food Processing Industries of India (MoFPI) to train IICPT staff and students at the U of M as well as to exchange faculty members between the two organizations for long-term research into better crop storage and processing systems at the IICPT.

Dean Glenn Feltham of the I.H. Asper School of Business and I represented the University of Manitoba during the mission to Israel organized by the Winnipeg Jewish Federation to strengthen ties between Manitoba and Israel. We participated in a series of meetings with representatives from academic and research institutions which will assist us in exploring new or expanded relationships with partners in Israel. While there, the University of Manitoba signed a cooperation agreement with the Hebrew University of Jerusalem which enables future cooperation in a variety of ways, ranging from the development of mutually beneficial academic programs to the exchange of research information.

At the November 4 Town Hall, members of the University of Manitoba community were updated on activities and progress related to the priorities outlined in the strategic planning framework since its approval in 2009. They also were provided with a more in-depth examination of issues relevant to the student experience and strategic enrolment management by Susan Gottheil, Vice-Provost (Students), and an identification of planned next steps.

The search for a new Executive Lead, Aboriginal Achievement now is underway. Assisting with the search process is Higgins International Inc., a Winnipeg-based search firm with particular expertise in Aboriginal executive searches. Joining me on the search committee are: Michael Robertson, Board of Governors; Harvy Frankel, Dean, Faculty of Social Work; Susan Gottheil, Vice-Provost (Students); John Alho, Associate Vice-President (External); Catherine Cook, Faculty of Medicine, First Nations, Metis and Inuit Health; Kali Storm, Director, Aboriginal Student Centre; Lindsay Bristow, University of Manitoba Aboriginal Students' Association.

ACADEMIC MATTERS

- Dean Jay Doering, Graduate Studies, was elected President of the Canadian Association for Graduate Studies.
- Dietmar Straub and Anna Thurmayr, architecture, winners of the Landscape and Urban Design competition for Chenshan Botanical Garden Shanghai, China in 2005/06, saw the efforts of their works open in April 2010. This 206 hectare garden is part of Expo 2010 in Shanghai and actually the world's biggest botanical garden.

- Warren Cariou, Director of the Centre for Creative Writing and Oral Culture, Neil McArthur, Associate Director of the Centre for Professional and Applied Ethics, and students Katie Mann and Teddy Zegeye-Gebrehiwot are currently making a documentary which asks, "What are human rights?" This question is at the crux of current political and social debate and although scholars, politicians, lawyers and activists insist on the importance of such rights, the concept of human rights is difficult to define and all definitions are contested. A series of interviews will be conducted with the intention of assembling a definition of human rights that is as diverse and complex as our multicultural society. Using the symbolism of the construction of the Canadian Museum of Human Rights, many of these interviews will be conducted with people who are visiting The Forks.
- Allen Harrington, music, returned from Europe where his saxophone performances included a concert at the internationally renowned Paris Conservatoire, accompanied by collaborative pianist and colleague, Laura Loewen.
- Grace Nickel, Art, has her commissioned artwork, Donor's Forest, unveiled this fall at the Beechwood National Cemetery of Canada in Ottawa. Nickel received the commission after winning a national competition for a commemorative work for the entranceway to the new Beechwood National Memorial Centre. The National Military Cemetery, the RCMP National Memorial Cemetery and the Canadian Veterans and War Dead are located in this cemetery.
- Rick Linden, sociology, has served as chair and co-chair of the Manitoba Auto Theft Task Force since 2003. A major initiative of the task force has been the Winnipeg Auto Theft Suppression Strategy (WATSS), which is a comprehensive program that includes intensive supervision of high-risk offenders, a mandatory immobilizer program for the most at-risk vehicles, and a broad range of community intervention strategies. This program received the 2010 International Association of Chiefs of Police (IACP)/Motorola Webber Seavey Award for Quality in Law Enforcement - or Webber Seavey Award which is presented to agencies and departments worldwide in recognition of promoting a standard of excellence that exemplifies law enforcement's contribution and dedication to the quality of life in local communities.
- The Humanoid Robotic Team led by Jacky Baltes, computer science, won the Champion of the Taiwan Micro-Mouse and Robot Contest: Humanoid Robot Explorer Challenge Contest – International Group, on October 2, 2010 in Tainan, Taiwan. The team consists of Jacky Baltes and his students, Chi Tai Cheng, Andrew Winton and Hanbyeol Stela Seo.
- Silvia Barcellos Rosa, plant science student, has just been awarded the 2011 Jeanie Borlaug Women in Triticum Award. This award is named after Jeanie Borlaug, daughter of Nobel Prize winner Norman Borlaug, and is awarded to deserving women scientists in early careers working with wheat. It will be presented at the 2011 Borlaug Global Rust Initiative meeting in St. Paul, MN, June 13, 2011. Silvia is a Ph.D. graduate student supervised by Anita Brulé-Babel working on the genetics of leaf rust resistance in the South American cultivar Toropi.
- Elijah Easton, music student, made a return visit to perform at the White House at the invitation of Michelle Obama. Elijah first attended a White House event in 2009 where he volunteered to go to the stage and perform with jazz legend Wynton Marsalis. The Obamas and Marsalis remembered Elijah's playing and invited him for the return visit.

- An agreement with four Chinese institutions to create a research consortium that will greatly improve grain storage capacity and research was signed by the University of Manitoba. The China-Canada Research Centre for Stored-Grain Ecosystems's memorandum of understanding was signed in September and will foster collaborations with the Academy of State Administration of Grain in Beijing, the Nanjing University of Finance and Economics, the Henan University of Technology and the Chengdu Grain Storage Research Institute.
- The first intake of physician assistants graduated from the University of Manitoba in October 2010. The ten graduates have completed the country's first Master's level education program for physician assistants. The two-year Master of Physician Assistant Studies degree is administered by the University of Manitoba faculties of Medicine and Graduate Studies and was launched in September 2008. These graduates are an important component to addressing our province's health care human resource needs.
- Funding from the Canada-Manitoba Western Economic Partnership Agreement of nearly \$1 million was announced in September for a new Agricultural Byproducts Processing and Demonstration Facility. The facility will be constructed at the Glenlea Research Station as part of the National Centre for Livestock and the Environment and in partnership with the Manitoba Pork Council. The new infrastructure will allow researchers to test and evaluate livestock byproduct treatment and management technologies in Manitoba's climate.
- Agricultural and Food Sciences hosted "Agriculture in the Classroom" – a very popular and hands-on Amazing Agriculture Adventure at the Glenlea Research Station in September. More than one thousand elementary school students from urban and rural Manitoba schools learned first-hand about a variety of agriculture topics.
- Starting this fall term, Asper School of Business is involved in an international project entitled Cross Atlantic Partnership in Network Systems and Information Management (CAPNSIM). The CAPNSIM project involves two other Canadian universities and three from Europe. The Human Resources and Skills Development Canada is funding Canadian partners through a \$200,000 grant. The main goal of the project is to increase student mobility between partner universities in France, Finland, and Hungary.
- The Asper School is pleased to be offering a pilot session of the Bridge to Professional Accounting (BPA) program for the September 2010/2011 academic year. The program prepares internationally trained accountants to enter the programs of professional studies for a Certified General Accountant, Certified Management Accountant or Chartered Accountant Designation.
- The Faculty of Law and the Law Society of Manitoba have partnered to create a unique program that will see students from remote Manitoba communities receive free legal education. Under the Law Society's "Forgivable Loans Program", if the chosen students return to their home communities after graduation, 20 per cent of their tuition and living costs while attending school will be reimbursed annually for five years.

RESEARCH MATTERS

- Three University of Manitoba professors have been elected as Fellows of the Royal Society of Canada (RSC), the country's most esteemed association of scholars and scientists, and one has been declared an award winner. The new Fellows and award winner will be officially inducted and honoured November 27 at the National Gallery of Canada in Ottawa. The University of Manitoba currently has 43 Royal Society Fellows. This year's Fellows and award winner are:
 - Terry Cook (history), has transformed our understanding of archives from being storehouses of old records to becoming themselves the focus for close scholarly attention. Seeing archives as sites of power, and archivists as agents of interpretation rather than passive curators, Cook has been able to reposition his profession—in Canada and internationally—to cope with the super-abundance of modern records to discern the tiny percentage that will survive as archives, and to respond to the challenges of digital records and of critical theory. He has developed a distinctive voice for Canadian archival scholarship worldwide and is also a pioneer in writing archival history.
 - Distinguished Professor Leslie Roos (community health sciences), co-founded the Manitoba Centre for Health Policy (MCHP) in Manitoba in the early 1990s. MCHP houses the Population Health Data Repository. This database allows researchers to examine the social determinants of health and the efficacy of the healthcare system. A revolutionary concept that helped transform research using data routinely collected by multiple ministries, the Repository continues to lead to important findings in health policy and prevention. Other leading scholars in Canada and countries around the world have since followed Roos' groundbreaking lead.
 - Distinguished Professor George Toles (English, film and theatre), is an accomplished scholar and artist with an international reputation for his critical and creative work. For more than 25 years he has been the scriptwriter, story consultant and script editor for director Guy Maddin and in the process helped shape one of the most innovative and highly-praised bodies of work in recent Canadian film history. Toles is also a major voice in contemporary film criticism. His book *A House Made of Light* is regarded as an essential text on the medium of film and appears on course reading lists around the world.
 - Distinguished Professor Frank Hawthorne (geological sciences), has addressed some of the most fundamental problems in mineralogy, and has made major contributions to our understanding of energetic and mechanistic factors affecting the stability of crystalline materials. His experimental work has involved a wide range of rock-forming and accessory minerals. In particular, he has addressed major issues in the crystal chemistry of many groups of these rock-forming minerals, revolutionizing our understanding of their structure and behaviour. He was listed by Thomson Scientific as 'the World's most cited Geoscientist of the Decade 1997-2006' and received the Killam Prize in Natural Sciences in 2008.
- Three professors have been elected fellows of the Canadian Academy of Health Sciences (CAHS). Election to Fellowship in the CAHS is considered one of the highest honours for individuals in the Canadian health sciences community. Fellows are elected by their peers in recognition of outstanding career accomplishments and exceptional leadership, creativity and commitment to advancing academic health sciences. The new Fellows are:

- Allan Becker (pediatrics/immunology), among Canada's premier academic pediatric allergists, is widely recognized for pioneering studies in, and active practice of, pediatric medicine, with a focus in early childhood asthma and allergies. He has made seminal contributions to allergy and asthma research and education, including an influential asthma education program across Canada, and highly cited research into gene-environment interactions. His accomplishments have impacted the scientific community, health educators and, most importantly, patients and their families.
- Hani El-Gabalawy (internal medicine) is an internationally-recognized leader in rheumatoid arthritis research. He has published landmark studies on synovial biology, the pathogenesis of early arthritis, and has recently established a unique First Nations cohort to study gene-environment interactions in the pre-clinical phase of arthritis. His research has been dedicated to understanding the mechanisms involved in initiating and sustaining rheumatoid arthritis and helping patients with this disorder.
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- Professor Emeritus Allan Ronald (medical microbiology) and renowned infectious disease researcher will be inducted into the Canadian Medical Hall of Fame in a ceremony held in Ottawa in April 2011. Ronald pioneered the University of Manitoba's world-renowned infectious disease research program, changing the landscape of this research field he has helped steer its future as a mentor to academics across Canada and globally. He has spent the better part of the last three decades studying infectious diseases in hard-hit Africa. His early work to control an outbreak of the sexually transmitted disease chancroid in Winnipeg in the mid-1970s provided a strategy that proved important later in the prevention and control of HIV infection. In 1980, he established one of the first clinical investigation units exploring sexually transmitted infections in Africa. The program put the University of Manitoba on the world stage as a leader in the field of HIV epidemiology and immunology, as well as improves disease prevention and care. Lessons learned have been used widely throughout Kenya and around the world. The Manitoba/University of Nairobi group has made major discoveries, including recognizing the importance of breast milk in the transmission of HIV from mothers to infants, the role of male circumcision in reducing the risk of HIV infection among men, and the role of the immune system in protecting some individuals from acquiring HIV infection.

Since his retirement from the University of Manitoba in 2000 he has been fostering the comprehensive HIV/AIDS Care and Prevention Program in Uganda. Ronald led the department of medical microbiology (1976-85) and then the department of internal medicine (1985-90) before serving as the faculty's associate dean of research (1993-99). He also led programs in Winnipeg's teaching hospitals, initially as head of clinical microbiology and later as physician-in-chief at the Health Sciences Centre and subsequently at St. Boniface Hospital as head of infectious diseases.

Ronald joins University of Manitoba Canadian Medical Hall of Fame laureates Dr. H. Bruce Chown (deceased) and Distinguished Professor Emeritus Henry Friesen.

- Joan E. Durrant, (family social sciences) and Acting Director of RESOLVE, is the recipient of the 2010 Ian Logan Memorial Award for Leadership. The award was established in 1987 by the Provincial Advisory Committee on Child Abuse to recognize the tremendous contributions made by Sergeant Ian Logan. Sgt. Logan was a respected police officer, a child abuse consultant, and an advocate for children. He was the Coordinator of the Child Abuse Unit for the Winnipeg Police Service for many years. The award is given to an individual who has made a significant contribution in the field of child maltreatment prevention and who exemplifies the qualities which were so much a part of Sgt. Logan's life: dedication to children, personal and professional discipline, and good citizenship.

Durrant's research has focused on the psychological and cultural factors that contribute to parents' use of corporal punishment, and she has published many academic papers on the issue. She has lived in Sweden for extended periods to study the context, history and implementation of the world's first corporal punishment ban, a law that reflects the child-rights focus of Sweden's social policy framework. Durrant was the principal researcher and co-author of the *Joint Statement on Physical Punishment of Children and Youth*, an initiative of 6 national Canadian organizations. The *Joint Statement* has been endorsed, to date, by more than 160 professional organizations across Canada. Durrant is also the author of several public education materials, including *What's Wrong with Spanking?* published by the Canadian departments of Justice and Health, and *Spanking: Should I or Shouldn't I?* a brochure that has reached a circulation of more than 300,000 in Canada.

- On October 21, 2010 the Manitoba Institute of Child Health hosted its 6th Annual Child Health Research Day. This successful and well-attended event showcased the latest in pediatric research conducted here in Manitoba and with collaborating partners across the world. A poster display and competition featured dozens of advances in medical research and a mid-day awards presentation honoured recipients of the Manitoba Institute of Child Health's research grants and awards, funded through the Children's Hospital Foundation of Manitoba. This free event was open to all audiences and was well-received by local researchers, students, and support staff.
- Ruth Ann Marrie (internal medicine/community health sciences) and Health Sciences Centre was awarded \$1,499,773 in funding from the Canadian Institutes of Health Research (CIHR) and the Rx&D Health Research Foundation (HRF) to study the impact of comorbidity (co-existing health conditions) on people with MS. Marrie will lead a national multidisciplinary team of researchers who will focus on three objectives: to develop methods for using health claims data to identify and monitor comorbidities among persons with MS and in the general population; to identify the type and frequency of comorbidities among those with MS compared to the general population (determining how this varies by age, gender, region and socioeconomic status); and then assessing the impact of these comorbidities on MS in terms of quality of life and how they influence health and disease-specific treatments for MS, and how they influence treatment decisions and access. Findings will be disseminated via a partnership with decision makers and the MS Society of Canada.
- The Dr. Paul H.T. Thorlakson Foundation Fund recently awarded \$232,666 to research projects led by ten faculty members and eight BSc students. The \$3.3 million Dr. Paul H.T. Thorlakson Foundation Fund was established in 1994. The fund supports new researchers as well as established scientists who are embarking on research projects in new territory. Beginning next year, the fund will provide a \$5,000 travel award for students or speakers to attend the Canadian National Medical Student Research Symposium, hosted by the Faculty of Medicine. The recipients are:

Researcher(s)	Project	Funding
James Bolton (psychiatry) and Gregory Finlayson (community health sciences)	Physical Disease and the Risk of Suicide: A Study of the Manitoba Population	\$27,629
Silvia Cardona (microbiology)	Construction of a <i>Burkholderia cenocepacia</i> Conditional-Growth Mutant Library to be Used in Antimicrobial Drug	\$28,833
Malcolm Xing (mechanical & manufacturing engineering/biochem)	Development of Tissue-Engineered Bone Graft Based on Stem Cells, Nanomedicine and Natural Polymer Scaffolds	\$30,000
McManus, Kirk (internal medicine)	Generation and Initial Characterization of a Murine <i>Rnf20</i> Knockout Model	\$30,000
Donna Martin and Roberta Woodgate (nursing)	A Family Health Needs Assessment with a First Nation Community Using Critical and Indigenous Methodologies	\$24,063
Zahra Moussavi and Karen Ethans (electrical and computer engineering)	Plasticity of the Spinal Neural Circuitry after Injury	\$22,507
Steven Whyard (biological sciences)	The Role of MicroRNAs in Regulating Responses to Oxidative Stress in the Brain	\$29,634

Student & Supervisors	Project	Funding
Alicia Barnard & Shaundra Popowich (obstetrics & gynecology)	Comparing of Cisplatin and Adriamycin with Carboplatin and Taxol for the Treatment of Carcinosarcoma. A Historical Cohort with Control from the University of Manitoba	\$5,000
James Bras & Ethan Rubinstein (internal medicine/medical microbiology)	Viral Co-Morbidity as a Factor Effecting Acute Respiratory Distress Syndrome in H1N1 Influenza Cases Requiring Intensive Care Treatment	\$5,000
Brett Houston & Ryan Zarychanski (internal medicine)	Phenotypic and Genotypic Evaluation of a Manitoban Kindred with Haemolytic Anaemia Associated with Decreased Osmotic Fragility	\$5,000
Lynda Kong & Michelle Porter (kinesiology & rec mgt)	Physical Function and Driving in Older Adults	\$5,000
Elaine Liu & Donna Wall (immunology/pediatrics)	Evaluating the Impact of Post Processing Events on Cord Blood Potency and Cord Blood Transplant Outcomes	\$5,000
Lisa Freeman & Shyamala Dakshinamurti (pediatrics/physiology)	Hypoxic Calcium Sensitization of Pulmonary Arterial Smooth Muscle Cells -- An Important Determinant of Pulmonary Hypertension	\$5,000
Kailun Jiang & Janice Safneck (pathology)	Components of Drusen Cause Over-Expression of Inflammatory Cytokines in RPE	\$5,000
Mark Lipson & Marshall Pitz (internal medicine)	Molecular Markers of Prognosis and Treatment Response in Glioblastoma	\$5,000

- On October 26, Minister Dave Chomiak announced provincial funding from the Manitoba Research and Innovation Fund (MRIF) of \$9.4 million to 25 projects at the University of Manitoba. These MRIF projects have been previously approved for funding through the Canada Foundation for Innovation. Projects and principal investigators are:

Researcher(s)	Project Name	Funding
Pat Martens (community health sciences)	The Manitoba Centre for Health Policy's "LEADERS" Initiative: Leading-Edge Access and Data Enhancement Research Strategy	\$ 1,453,776
Sabine Mai (cell biology/physiology)	Three-Dimensional NanoBioMedical Imaging Node (3D-Nbmin)	\$1,226,064
Aaron Marshall (immunology/biochemistry/medical genetics)	Manitoba Integrated Cell Purification and Analysis Unit	\$ 596,245
Peter Eck (human nutritional sciences)	Nutrigenomics Research Laboratory	\$ 125,000
Verena Menec (community health sciences)	The Canadian Longitudinal Study on Aging (CLSA): Understanding the Complexity of Aging and Health Through Interdisciplinary Research	\$ 684,940
Greg Bridges (electrical & computer engineering)	emSYSCAN - Enabling Canadian Microsystems Technology Development through Multiple-Technology Platform Infrastructure	\$ 450,000
Jeffrey Marcus (biological)	Phylogenomics Research Laboratory (CRC?)	\$ 125,000

sciences)		
Zahra Moussavi (electrical & computer engineering)	Brain Function Laboratory	\$ 125,000
Prashan Chelikani (oral biology)	Biochemistry Laboratory for G-Protein Coupled Receptors (GPCRs) research	\$ 252,992
Paul Fernyhough (pharmacology/neurodegenerative disorders) and Peter Zahradka (physiology); St. Boniface Hospital Research	High Content and Non-invasive Bioimaging Facility	\$ 379,388
Sean McKenna (chemistry)	Protein/Nucleic Acid Biochemistry Laboratory	\$ 159,922
James Nagy (physiology)	Infrastructure for Advanced Research in Gap Junction Neurobiology	\$ 398,086
John Page (physics & astronomy) and Martin Scanlon (food science)	Mesoscopic Wave Physics and Characterization of Complex Materials	\$ 399,525
Debbie Kelly (psychology)	Laboratory in Age-Related Spatial Degeneration	\$ 124,952
John Cadogan and Johan van Lierop (physics & astronomy)	Nanostructure Analysis Tools for Nanomagnetic Materials	\$ 244,297
James Davie (biochemistry/medical genetics/cell biology); Manitoba Institute of Cell Biology	Epigenetic Regulation and Human Disease	\$ 378,074
Denis Krause (animal science/medical microbiology)	Gut Microbiome Lab	\$ 337,150
Francis Lin (physics & astronomy)	Infrastructure for Analyzing Immune Cell Trafficking <i>in vitro</i> and <i>in vivo</i>	\$ 157,367
Suresh Mishra (internal medicine)	Signal Transduction Lab in Diabetes Research	\$ 128,220
Helene Perreault (chemistry)	Rapid Characterization of Post-Translational Modifications in Proteins Using a Tandem Time-Of-Flight/Time-Of-Flight MALDI Mass Spectrometer	\$ 325,546
Mojgan Rastegar (immunology/biochemistry/medical genetics)	Epigenetics and Stem Cell-Based Gene Therapy of Neurological Disorders: Establishment of Gene Transduction and Analysis Lab	\$159,521
Sherif Sherif (electrical & computer engineering)	Infrastructure for Biophotonic Computational Imaging Lab	\$ 128,370
Barbara Triggs-Raine (biochemistry/medical genetics) & Andrew Halayko (internal medicine/physiology); Manitoba Institute of Child Health	Murine MicroCT/Optical Imaging Lab	\$ 511,193
Francis Zvomuya (soil science)	Controlled Environment Lysimeter Facility	\$ 181,796
Pourang Irani (computer science)	Collaborative Visual Analytics (CoVA) Lab	\$ 376,790

- Ten researchers received contract funding for 29 projects totalling \$2,669,817:

Researcher	Funder	Project Title	Amount
Richard Baydack (environment & geography)	Province of Manitoba	Establishing a Process for a Wetland Vegetation Rehabilitation & Management Program Focused on Reed Canary Grass: A Parkland Mews Case Study	\$12,000
Paul Bullock (soil science)	Canola Council of Canada	Enhancing canola Emergency with Innovative Stubble Management Practices and Use of Crop Establishment Aids	\$188,400
Paul Bullock (soil science)	Canola Council of Canada	Weather Based Assessment of Sclerotinia Stem Rot Risk	\$441,750
Alfredo Camacho (geological sciences)	Universita di Padova	Dating of Pseudotachylytes from Central Australia	\$4,190
Martin Entz (plant science)	Agriculture & Agri-Food Canada	Land Preparation and Seeding of Organic Wheat and Oat Nurseries at UofM Glenlea Research Station and UofM Carman Research Station	\$14,529
Donald Flaten (soil science)	Canola Council of Canada	Improving Nutrient Management in Canola and Canola-Based Cropping Systems	\$89,125
Gordon Goldsborough (biological sciences)	Province of Manitoba	Fisheries and Water Quality Studies Leading to the Restoration of Delta Marsh by the Exclusion of Common Carp (Cyprinus Carpio)	\$25,000
Xiaochen Gu (pharmacy)	Nanjing Aosaikang Medicinal Group Co.Ltd.	Solid lipid nanoparticles of fluconazole and lidocaine	\$93,900
Robert Gulden (plant science)	Canola Council of Canada	Improving Canola Establishment and Uniformity Across Various Soil-Climatic Zones of Western Canada	\$38,000
Robert Gulden (plant science)	Canola Council of Canada	Integrated Crop Management Systems for Wild Oat Control	\$60,000
Robert Gulden (plant science)	Canola Council of Canada	Developing Methods to Estimate Pod Drop and Seed Shatter in Canola	\$92,000
Robert Gulden (plant science)	Canola Council of Canada	Evaluation of Harvest Losses and Their Causes in Canola Across Western Canada	\$87,167
Can-Ming Hu (physics & astronomy)	Shanghai Weining Technology Dev. Co. Ltd.	Spintronic Microwave Near-Field Testing System	\$100,000
Digvir Jayas (biosystems engineering)	Canola Council of Canada	Storage and Handling Characteristics of New Varieties of High Oil Content Canola	\$159,000

Digvir Jayas (biosystems engineering)	Canola Council of Canada	Feasibility of Bag Storage System of Canola Under Prairie Conditions	\$238,500
Soheila Karimi-Abdolrezaee (physiology)	Neilsen (The Craig H.) Foundation	Therapeutic strategies to activate endogenous neural stem cells after spinal cord injuries	\$100,313
Genyi Li (plant science)	Manitoba Assoc. of Agricultural Societies/ARDI – ARDI Growing Forward	Transferring of Clubroot Disease Resistance Genes of B. Rapa and B. Oleracea into Canola Using Synthetic B. Napus	\$75,000
Joe LoVetri (electrical & computer engineering)	Kraus Global Inc.	Automated Fuel Management System for Compressed Natural Gas Fuel Dispensing with Machine Learning Algorithms and Wireless Vehicle Recognition	\$18,000
Jeannette Montufar (civil engineering)	Environment Canada	Development of inputs for modelling vehicle emissions: spatial, temporal, and vehicle-specific factors for Saskatoon & refinement of vehicle activity data for Winnipeg	\$70,000
Peter McVetty (plant science)	Manitoba Assoc. of Agricultural Societies/ARDI – ARDI Growing Forward	Natural Cropping Systems Grain Crop Breeding for Manitoba	\$210,000
Michael Namaka (pharmacy)	Pfizer UK	The Molecular Mechanisms Underlying Neuropathic Pain Associated with Multiple Sclerosis	\$228,607
Ahmed Shalaby (civil engineering)	Province of Manitoba	Alternative Methods for Portland Cement Concrete Partial Depth Repairs	\$15,000
Mario Tenuta (soil science)	Environment Canada	Greenhouse Gas Fluxes at Churchill, Manitoba in a Changing Environment	\$12,000
Jane Ursel	Centre for Aboriginal Human Resource Development Inc.	Statement gathering training initiative	\$33,668
Jane Ursel	Truth & Reconciliation Commission of Canada	Truth and reconciliation phase 1 statement gathering: Winnipeg	\$35,000

ADMINISTRATIVE MATTERS

- Project ROSE** – As the University of Manitoba embarks on its continuous improvement journey, enhanced project management, change management and communication strategies are required to ensure successful implementation of the planned ROSE initiatives. It is also anticipated that as we move forward, further opportunities for improvement will be identified. An Office of Continuous Improvement will be established over the next few months. A project director will be hired and in house project leads to spearhead the implementation of the various project initiatives will be

identified. Many of these initiatives can be implemented over the next six to twelve months but some of the more complicated ones will take several years to fully implement.

PricewaterhouseCoopers has been instrumental in assisting the various functional areas to assess opportunities and identify a vision for the future state in each area. The University, subject to Board approval, will enter into a contract with PricewaterhouseCoopers to provide project management and change management support to the various streams over the next six months. Part of the responsibility of PwC will be to provide the necessary training to the in house staff so that they can take ownership of the project and continue to lead the various initiatives following the 6 month contract with PwC. The continued engagement of PwC for 6 months will ensure that the ROSE project does not lose momentum. It is also anticipated that a number of the initiatives will be completed during this 6 month time frame.

The total cost savings associated with the ROSE project initiatives are significant, in the range of \$8-15 million annually if all projects are successfully implemented. Annual savings of \$1.1 million have been achieved to date. Furthermore, based on changes already implemented related to International student recruitment and support from the endowment fund for hiring additional fundraising staff, increased revenue of \$10-12 million is anticipated.

Equally if not more important are the significant service enhancements associated with these changes which will undoubtedly translate into increased enrolments, more satisfied users and employees.

- **Wallace Building Flood** – Large amounts of rain the week of October 24th, coupled with ongoing construction, resulted in significant water damage to the Wallace Building. The water penetrated the temporary roof membranes that had been put in place by PCL Construction. The water ran down most of the exterior support pillars and down some of the interior support pillars and then entered various classrooms, labs, offices, lecture theatres and hallways. The damage will necessitate the removal of a large amount of drywall, carpeting, ceiling tiles, furniture and fixtures from a number of offices, classrooms and labs throughout the building. An early estimate of the damage is \$3 to \$3.5 million.

Any material showing any sign of mould growth has been targeted for specialized abatement activities. Rooms on the north side of the building have been most directly impacted, although all floors have experienced some water damage. The fourth floor has suffered the brunt of the damage so faculty, administration and student groups within the Centre for Earth Observation Science (CEOS) will be temporarily reassigned to rooms 357, 358, 356, 348 and 344 of the Wallace Building. The Dean's office has moved to the boardroom in room 453.

The 300, 200, and 100 levels have also been impacted. Rooms such as 315 and 323 sustained serious damage and are, for the foreseeable future, unusable. Classes normally held in these rooms have been moved and impacted students have been notified of the change of location.

- **Security Services** – received a report that someone was in possession of a gun in a residence building. The Emergency Response Manager was contacted, along with the Winnipeg Police Service Tactical Unit. The building was evacuated and searched but no gun was found. Follow up information received confirmed no evidence of a weapon and information was placed on the U of M home page for the community.

- **Outstanding Workplace Initiative** – Dr. Stan Amaladas has been appointed to a one-year term effective November 1, 2010 as Learning and Change Consultant in support of the University's priority to become an employer of Choice. Dr. Amaladas has a PhD in Leadership and Organizational Change from Walden University and a MA in Sociology from the U of M. He is currently on a one-year leave from his position as an Associate Professor in the School of Leadership Studies at Royal Roads University in Victoria. He also has over 20 years of experience as a human resources and learning advisor with the Government of Canada and various other client groups.
- **UMFA Bargaining** – Ratified a new three year agreement from April 1, 2010 to March 31, 2013. The agreement was ratified by over 85% of the members that voted. The agreement contains support from UMFA for a proposal to increase pension contributions by both the employee and the University of January 1 of 2011, 2012 and 2013. The total increase will be 2% from each of the employees and the University. The proposed Pension Plan amendment was passed by the Staff Benefits Committee on November 2, 2010. A resolution will be forwarded to the Board of Governors for approval.
- **Sun Life Financial – Group Retirement Options** - A new University of Manitoba Sponsored [Group Retirement Income Plan](#) is now available. The University has entered into an agreement with Sun Life Financial to provide retirees with an opportunity to participate in a Group Retirement Income Plan which offers; Life Income Funds (LIF's), Retirement Income Funds (RRIF's) and Prescribed Retirement Income Funds (PRIF). The University of Manitoba Pension Plan allows for transfers to these products as retirees may elect to receive a monthly pension from the Pension Plan or transfer funds to another institution.
- **U of M Retirees Presentation** – Deborah McCallum attended the Retirees Reception on October 16 and presented an overview of the changes at the U of M in the last six months as well as information regarding the new Sun Life Group retirement option.
- **E-paystubs** – have been provided to all employment groups now. There are 6,600 employees fully converted plus 2,200 students. Just over 300 individual have opted out (CAW being the large majority).
- **Electronic Monthly Operating Reports (MORs)** - continue to move towards electronic MORs with a target completion of January 2011. Security profiles have been established for signing authorities and other responsible individual and are asking Faculty to identify individuals who don't have access or are inactive. After discontinuing the paper reports, the next phase will target monthly Research financial reports.
- **Responsible Alcohol Consumption on Campus** - As part of the UM "Action Plan to Promote Responsible Alcohol Consumption on Campus", Professor Robert Solomon from the Faculty of Law, University of Waterloo, and Director of Legal Policy for MADD, presented an in-depth workshop to Dean's, Directors, *MSU and Student Councils. Professor Solomon delivered 2 workshops entitled "Campus Alcohol Policies and Practices: Responding to the Risks of Alcohol-Related Liability". The workshops were well attended and included 4 inspectors from the MLCC. Conference and Catering Services, Risk Management, UMSS and UMSU work together with the MLCC to offer the UMSAFE and Student Risk Event Planning Workshops. This training is a requirement of the Campus Alcohol

Policy and certifies all students who serve alcohol at events on campus. An ad hoc working group is currently reviewing University practices and policies.

- **Stadium Event Day Parking Plan** – An open house is planned on November 25th from noon until 1:00 p.m. for all Faculty, staff and students to review the preliminary plans drawn up by Creswin to manage parking on campus during Bomber games at the stadium. A parking lot utilization study was conducted by student patrols on October 23rd to count and assess usage of University parking lots during a game day --- in this case a Saturday afternoon Bomber game. The results of this study will be presented at the Open House.
- **Pembina Hall Residence** – The construction schedule is still on track, with steel erection slated for completion the last week of November. The Dining Hall will reopen to residence students in January 2011. In order to meet the aggressive schedule, steel crews are now working on weekends.
- **Bistro two o five** - A preview luncheon was held Thursday, October 21st for special guests at the new bistro two o five in University Centre. It officially opened for business on Monday, October 25th. The bistro offers a sit-down lunch service with daily specials and coming soon, a prix fixe menu. The venue is open from 11:30 am – 2:00 pm Monday through Friday, and is available for special events/functions that can be booked through Catering and Conference Services.
- **CityChase Event** - CityChase is an urban adventure series similar to “The Amazing Race” that films competition sequences around the world. This year Winnipeg has been chosen for the finals of the Canadian leg of the race and one event was filmed on campus on Saturday, October 30th. The event was a car pull challenge coordinated around the ring road from St. Andrew’s College to the Welcome Centre.
- **Campus Planning** - A new Campus Planning and Real Estate department is being set up. A job description and advertisement have been created for the new position of Director, Campus Planning and Real Estate.
- **Smartpark** – Construction has begun on the new Meeting Centre. The Monsanto expansion will be complete by mid-November, ahead of schedule. Work has begun on additional landscaping around the second retention pond. Hard landscaping has begun on Innovation Plaza at the first retention pond. About 3,200 cubic meters of stadium topsoil was delivered in September to the stripped site to south half of Parcel B west of Lake 2 retention pond at Smartpark.
- **Wise Guys Space** – The Office of the Vice-President (Administration) is awaiting a proposal from UMSU and GSA for consideration of a community-style pub to replace Wise Guys in University Centre. No other expressions of interest are being considered at this time. UMSU has been given a deadline of December 1st to submit a proposal, based on a list of key criteria that includes strict adherence to Liquor Control Act regulations.
- **Waste Reduction Week** – Waste Reduction Week was held October 18-24 with Campus Sustainability Day on October 20. During this period waste diversion/recycling was promoted to students, faculty and staff via posters, UMFM info bulletins, contests, Mount Trashmore and a re-shop open house. Pamphlets on recycling, magnets and notepads were distributed to attendees and contest winners.

- **Sustainability** - Maire McDermott, Sustainability Coordinator, has been appointed the University Representative on the City of Winnipeg's Comprehensive Integrated Solid Waste Management Stakeholder Advisory Committee
- **Domino Project Update**
 - **ART Lab** – Tiles, vertical wall pours, slab pours, pile cap cut offs, under slab plumbing and electrical conduit installations are all complete. The schedule has been delayed by 34 days to date due to weather related site closures. Project completion scheduled for October 2011.
 - **Biological Sciences Building** – The new tunnel concrete work and waterproofing is complete. Foundation waterproofing is ongoing while completed areas are being backfilled. The new window frames are approximately 80% complete. Mechanical and electrical rough-in work is underway on all levels of the building and tunnel.
 - **New Student Residence** – Erection of the steel members for East Tower is complete and West Tower is 95% complete. Level 10 steel spanning over Pembina Hall is now complete. Pouring of concrete floors is in progress.
- **CIO search** - The CIO search is ongoing for the Chief Information Officer to replace Gerry Miller, Executive Director of Information Services and Technology.
- **Print Management** – The University has entered into a contract with Xerox to perform a University-wide print management assessment.
- **Email Disruptions** – IST has had to deal with a number of service disruption issues including email phishing that resulted in spam and being blacklisted by some Internet Service Providers, website connection problems, and a storage device that had a hardware failure.

EXTERNAL MATTERS

- **Alumni Affairs** - Lila Goodspeed, (BScHEc/64, CertEd/68, BEd/79), received the 2010 Distinguished Alumni Award on October 21 at Fall Convocation. During her career as an educator, Lila Goodspeed taught at the junior high, high school and post-secondary levels. A staunch advocate for volunteerism, Lila's commitment to her community has been demonstrated through her involvement with several prominent boards and committees including: the Winnipeg Art Gallery, Manitoba A.L.I.V.E., Junior League of Winnipeg, Lake Winnipeg Foundation, Gimli Film Festival, Manitoba Theatre Centre, Nellie McClung Foundation and the Alumni Association Inc. of the University of Manitoba. Approximately 100 people attended a reception in her honour, which included greetings from President Barnard and a tribute to Ms Goodspeed by Janice Filmon, (BScHEc/63), herself a previous recipient of the Distinguished Alumni Award with her husband, Gary (BScCE/64, MSc/67).
- **Public Affairs** - Our fall marketing campaign in support of recruitment began appearing in the local Manitoba market during the week of October 16th. Building on the "Be More" theme, and directing to the refreshed itsmyfuture.ca micro-site, the creative will be featured on transit shelters, bus posters, and radio - Hot 103 as well as CKJS (ethnic radio) - in Winnipeg. Movie theatre video spots

will appear in Winnipeg and Brandon. Online strategies include web advertising on sites targeted demographically to youth; Google Adwords search advertising; and Facebook ads. Targeted print ads will support the campaign in selected local and national publications.

The itsmyfuture.ca micro-site features eight student bloggers representing a range of faculties. Four students are new and four have returned from last year. The site is now live so you can check out their profiles and their blogs.

This flight of the campaign will run for 4-6 weeks and a second winter flight will start mid-January and run through February.

- **Development and Advancement Services** - On October 22, the University of Manitoba paid tribute to all that William and Helen Norrie have done for the university community by naming a walkway in their honour. A plaque dedicating the William and Helen Norrie Walkway, which runs between the Engineering and Information Technology Complex and University Centre, was unveiled at the event which was attended by approximately 80 people.
- **Government Relations Office** - On September 20, 2010 the Government Relations Office hosted eight senior public servants from Ottawa, who are part of the Advanced Leadership Program. The purpose of the visit was to broaden the knowledge and experience of the federal officials with programs taking place at the university. The itinerary included meetings with Aboriginal students and administrators, several members of the Arctic Research Team, and industry representatives from Smartpark.

The federal government announced that they will be contributing \$999,500 to the development of a new Byproducts Processing and Demonstration Facility at the University of Manitoba's Glenlea Research Station. This facility will conduct innovative research that will help to position Manitoba as a leader in the treatment of agricultural byproducts.

The University of Manitoba received \$75,000 from the Council on Post Secondary Education in support of the initiative to establish a Manitoba Institute for Policy Research. This matches a University contribution of \$75,000 from the Academic Enhancement Fund and \$25,000 from the Faculty of Arts.

The Honourable Stan Struthers has announced that the provincial government will provide a grant in the amount of \$100,000 in support of the *Human Ecology Centenary Legacy Fund*. This grant was awarded in recognition of the faculty of human ecology's 100th anniversary. The fund will generate revenue to support scholarship awards for students pursuing a baccalaureate degree in human ecology, science, health studies or health sciences in the faculty of human ecology.

November 17, 2010

Report of the Senate Executive Committee

Preamble

The Executive Committee of Senate held its regular monthly meeting on the above date.

Observations

1. Speaker for the Executive Committee of Senate

Professor Mark Gabbert will be the Speaker for the Executive Committee for the December meeting of Senate.

2. Comments of the Executive Committee of Senate

Other comments of the Executive Committee accompany the report on which they are made.

Respectfully submitted,

Dr. David Barnard, Chair
Senate Executive Committee

Terms of Reference:

http://umanitoba.ca/admin/governance/governing_documents/governance/sen_committees/477.htm

/mb

Report of the Senate Planning and Priorities Committee RE: Site approvals related to Stadium Development and the Sport and Active Living Precinct

Preamble:

1. The terms of reference of the Senate Planning and Priorities Committee (SPPC) are found on the website at:
http://www.umanitoba.ca/admin/governance/governing_documents/governance/sen_committees/508.htm, wherein SPPC is charged with making recommendations to Senate regarding physical plant development.
2. The SPPC Space Planning Subcommittee met on September 23, 2010 to review a proposal to extend and further consolidate the Sport and Active Living Precinct.

Observations:

The committee observed and noted the following:

1. The physical and functional relationships between various program elements are well considered in a separate report authored by Alan Simms, Associate VP Administration.
2. Extending the Sport and Active Living Precinct to the west to include the Indoor Soccer Complex and new play fields is appropriate. This will also include the S/D parking area which provides 575 parking stalls.
3. Relocating the existing playing fields to the west and developing artificial play fields adjacent to the soccer complex creates more opportunities for extending soccer programs while providing easily accessed parking.
4. As noted in the Report: "The Active Living Centre will benefit from the bulk of funding from the new football stadium development. The ALC is intended in part to provide a replacement track for the 'gritty grotto' and will make use of existing shower and locker facilities in Frank Kennedy. It will assist the University in developing world class recreational and athletics facility; advancing student and community health and wellness interests and in; promoting the University's interaction with the community".
5. The Active Living Centre is to be located on X lot at the northwest corner at University Crescent and Dafoe Road. The site is highly visible and marks a significant entry point to the central campus. As such, the architectural response should strive to communicate our institutional aspirations. The proposed ACL building is being designed by Cibinel Architects under the direction of a very capable steering committee. The preliminary design work is very exciting and shows great promise providing that the budget can meet noted ambitions.
6. The parking on X lot will be reduced; however, discussions are underway to consider underground parking in the 'gritty grotto' area.

<p><u>Comments of the Senate Executive Committee:</u> The Senate Executive Committee endorses the report to Senate.</p>

Recommendations:

The SPPC recommends:

**THAT Senate approve and recommend to the Board of Governors that it approve
Extend the precinct; to relocate the play fields and; to site the Active Living Centre
on X lot, and recommends these to Senate for approval.**

Respectfully submitted,

Ada Ducas, Chair
Senate Planning and Priorities Committee

Report of the Senate Committee on Admissions concerning a proposal from the School of Medical Rehabilitation to make numerous changes to the admission requirements for its undergraduate Respiratory Therapy Program (2010.10.13)

Preamble:

1. The terms of reference for this committee can be found at: http://umanitoba.ca/admin/governance/governing_documents/governance/sen_committees/490.htm.
2. The changes to admission requirements proposed in this document for the Respiratory Therapy (RT) Program in the School Of Medical Rehabilitation come after extensive consultation within the Department of Respiratory Therapy and the School of Medical Rehabilitation and address issues associated with the eligibility requirements for the program, a desire to increase recruitment of suitably prepared applicants, a desire to broaden the inclusion of Aboriginal applicants and a need to improve the clarity of the requirements. This proposal, slated to take effect for the 2011-2012 intake, was approved by the School of Medical Rehabilitation Council Executive on October 4, 2010.

Observations:

1. Category 1 applicants: The RT Program proposes that, in order to be eligible for consideration, applicants must have completed at least 24 credit hours (down from 30) within two consecutive terms (i.e., generally from September through April). This change opens eligibility to students who have taken only 24 credit hours in one year and is intended to increase the number of students eligible for consideration for admission. If an applicant has completed more than 24 credit hours within two consecutive terms, the average over the best 24 credit hours will be used in the calculation of the Adjusted Grade Point Average (AGPA) for any academic year included in the applicable formula.

The RT Program also proposes to increase the minimum grade requirements for category 1 applicants to B (from C) in the required courses and to B (from C+) in the adjusted grade point average in order to be eligible for consideration. This change is introduced to better ensure the preparation of students for the academic requirements of the program and to reduce the potential for opening eligibility to students with insufficient academic ability to be successful in the program.

2. The RT Program proposes to redefine its category 2 to include those applicants who have completed fewer than 24 credit hours in any two consecutive terms (normally September through April) but who have completed at least 24 credit hours in total, aligning the minimum credit hour minimum standard in this category with that of category 1.

Also for category 2 applicants, the RT Program proposes to change the minimum grade in required courses to B+ (from C) and in the adjusted grade point average needed for eligibility to B+ (from B). The change to B+ is proposed in order to ensure that students who have not demonstrated the ability to handle a relatively heavy course load in the program by having completed a minimum of 24 credit hours within two consecutive terms are demonstrating academic ability levels that are more predictive of success in the program.

In general, these changes to eligibility requirements are proposed in order to make the requirements better reflect what is needed to be successful in the program without

<p><u>Comments of the Senate Executive Committee:</u>The Senate Executive Committee endorses the report to Senate.</p>
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adding requirements that would unduly deter recruitment. Review of student performance over the past several years indicates that students who have entered the program via category 2 with very few credit hours in prior years have significant difficulty in the program. Meanwhile, there is a shortage of Respiratory Therapists in the province, and there is only space for 16 students to be enrolled each year in the program. It is important to set eligibility requirements that best ensure potential for success in the program.

3. The RT Program proposes a change that would allow either Introduction to Psychology or Introduction to Sociology as core required coursework (rather than both of these courses). This change ensures that students have completed an Arts requirement but reduces the number of students who are ineligible because they have not completed both of these courses. Should an applicant have completed both Introduction to Psychology and Introduction to Sociology (or their equivalents), only the course with the higher grade will be considered as a core course in the calculation of the AGPA.

This modification follows a 2009-2010 decision to add Introductory Statistics as a prerequisite course for the program, a change that increased the specified prerequisite coursework to a total of 24 credit hours. The current proposal would see the specified prerequisite course work account for a more reasonable 18 credit hours of the required 24 credit hours required for admission. Therefore this change is intended to facilitate attracting sufficient enrolment numbers without unduly compromising the knowledge required for eligibility.

4. The RT Program proposes that applicants who are of self-declared Aboriginal descent be included in the special consideration category. Inclusion of these students is intended to encourage more applications from Aboriginal students in addition to those who apply from the University of Manitoba Health Careers Access Program (HCAP). To be eligible for consideration in the 'special consideration category', applicants must meet all of the eligibility requirements and be enrolled in the UM HCAP (Health Careers Access Program) or be of self-declared Canadian Aboriginal descent. (For the purpose of identification, a Canadian Aboriginal person is a descendant of First Nations, Métis, or Inuit heritage. First Nation includes Status, Treaty, or Registered individuals as well as Non-Status and Non-Registered individuals.) This category is open to all applicants declaring Aboriginal heritage, regardless of provincial or territorial residency, though Manitoba residents will be given first priority.

Individuals who meet the 'special consideration category' requirements will be given priority for up to three of the 16 seats available in the year of application. The RT Program reserves the right to transfer an applicant into the regular academic pool should this prove advantageous to the applicant.

5. The RT Program proposes to select students from all categories of applicants, in the following order: (a) applicants in the special consideration category, first those who also meet the category 1 eligibility requirements, and then those who also meet the category 2 eligibility requirements; (b) category 1 applicants; and (c) category 2 applicants. The selection committee shall consider applicants from each category of admission based on their overall score and rank.

The substantial change in this section indicates that category 1 applicants will be given priority over category 2 applicants in the selection process. The rationale is to give priority to applicants who have fulfilled the more rigorous eligibility requirements in an effort to bring the most qualified students into the program. 'Special consideration

category' students meeting category 1 or category 2 eligibility requirements remain as first priority in the selection process.

Recommendations:

The Senate Committee on Admissions recommends THAT:

Senate approves the proposal from the School of Medical Rehabilitation to change the admissions requirements for its undergraduate Respiratory Therapy Program, to take effect for the 2011-2012 intake, as follows:

- That, in order to be eligible for consideration in category 1, applicants must have completed at least 24 credit hours (down from 30) within two consecutive terms (i.e., generally from September through April);
- That, in cases where applicants have completed more than 24 credit hours within two consecutive terms, the AGPA calculation will include the best 24 credit hours for any academic year included in the applicable formula for each applicant;
- That the minimum grade requirement allowing eligibility for consideration of category 1 applicants be increased to B (from C) in the required courses and to B (from C+) in the adjusted grade point average;
- That eligibility requirements for its category 2 applicants be redefined to include those who have completed fewer than 24 credit hours in any two consecutive terms (generally from September through April) but who have completed at least 24 credit hours in total;
- That the minimum grade requirement allowing eligibility for consideration of category 2 applicants be increased to B+ (from C) in both the required courses and the adjusted grade point average;
- That either Introduction to Psychology or Introduction to Sociology be accepted as core required coursework (rather than both of these courses);
- That applicants who are of self-declared Aboriginal descent be included in the special consideration category;
- That individuals who meet the 'special consideration category' requirements be given priority for up to three of the 16 seats available in the year of application;
- That the order of selection from all categories of applicants be as follows: (a) applicants in the special consideration category—first those who also meet the category 1 eligibility requirements, and then those who also meet the category 2 eligibility requirements; (b) category 1 applicants; and then (c) category 2 applicants. The selection committee shall consider applicants from each category of admission based on their overall score and rank.

Because the Respiratory Program is proposing that these changes become effective for the 2011 intake, and because longer notice is usually required when more restrictive admission requirements are proposed, the program will add a 'grandparent clause' to this proposal—and to the applicant information bulletin—allowing a minimum grade of C for core course requirements and/or a minimum adjusted grade point average of C+ in category 1 and B in category 2 for the 2011 intake only.

Respectfully submitted,

Susan Gottheil, Chair
Senate Committee on Admissions

Report of the Senate Committee on Instruction and Evaluation RE: New Regulation to Limit Time in the Preliminary Engineering Program, Faculty of Engineering

Preamble:

1. The terms of reference for the Senate Committee on Instruction and Evaluation (SCIE) are found on the web at:
http://umanitoba.ca/admin/governance/governing_documents/governance/sen_committees/502.htm
2. The Committee met on the above date to consider a proposal from the Faculty of Engineering to regulate the time a student is in the Preliminary Engineering Program.

Observations:

1. The Faculty of Engineering proposes that an upper limit be set on the time a student in the faculty may remain in 'first-year' without progressing into one of the four Engineering departments.
2. This regulation would apply to direct entry students or students admitted to the Preliminary Engineering Program would require 'first-year' course requirements to be completed in a timely fashion.
3. This regulation would not affect students applying to the Faculty from University 1, other programs, faculties, or colleges, who are admitted directly into one of the four Engineering departments rather than the Preliminary Engineering Program.
4. The proposed Calendar entry would be as follows:

Faculty of Engineering

Section 3: Academic Regulations

3.13 Limit on Time in the Preliminary Engineering Program

Students admitted to the Faculty of Engineering shall have two years to complete the minimum course requirements and submit a program declaration form for transit into an Engineering department. In the case of students admitted to the faculty through the Engineering Access Program the limit shall be three years.

Students who fail to meet this criterion shall be required to withdraw from Engineering. Such students may subsequently apply to be reinstated after successfully completing *all* courses forming the Preliminary Engineering Program.

Recommendations

The Senate Committee on Instruction and Evaluation recommends:

THAT Senate approve the proposal from the Faculty of Engineering to limit the time a student can be in the Preliminary Engineering Program.

Respectfully submitted,

Dr. Karen Grant, Chair
Senate Committee on Instruction and Evaluation

Comments of the Senate Executive Committee:
The Senate Executive Committee endorses the report to Senate.

Report of the Senate Committee on Instruction and Evaluation RE: Modification to criterion for Dean's Honour List, Faculty of Pharmacy

Preamble:

1. The terms of reference for the Senate Committee on Instruction and Evaluation (SCIE) are found on the web at:
http://umanitoba.ca/admin/governance/governing_documents/governance/sen_committees/502.htm
2. The Committee met on the above date to consider a proposal from the Faculty of Pharmacy to modify the criterion for eligibility for Dean's Honour List.

Observations:

1. The distribution of credit hours in fourth year Pharmacy are unevenly distributed such that the fall term is composed of 24 credit hours while the winter terms is composed of 10 credit hours.
2. The Faculty noted that the 10 credit hours in the winter term leaves these students ineligible for the Dean's Honour List.
3. The Faculty proposes to modify the criterion for the Dean's Honour List to specifically accommodate these students.
4. The revised Calendar entry would read:

Faculty of Pharmacy – Dean's Honour List

Eligible students who achieve a combined fall and winter sessional GPA of 4.0 or higher will be placed on the Dean's Honour List. Eligible students must have completed a minimum of 12.5 credit hours in each of the fall and winter terms (*Exception: Fourth year students must complete a minimum of 10 credit hours during the winter term.*) The Dean's Honour List designation is not applied until the end of the winter term.

Recommendations

The Senate Committee on Instruction and Evaluation recommends:

THAT Senate approve the proposal from the Faculty of Pharmacy to modify the Dean's Honour List criterion.

Respectfully submitted,

Dr. Karen Grant, Chair
Senate Committee on Instruction and Evaluation

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Comments of the Senate Executive Committee:
The Senate Executive Committee endorses the report to Senate.

Report of the Senate Committee on Instruction and Evaluation RE: Establishment of eligibility requirements for 'Dean's Honour List' and 'Degree with Distinction' for students in the B.A. Integrated Studies program, Faculty of Arts

Preamble:

1. The terms of reference for the Senate Committee on Instruction and Evaluation (SCIE) are found on the web at:
http://umanitoba.ca/admin/governance/governing_documents/governance/sen_committees/502.htm
2. The Committee met on the above date to consider a proposal from the Faculty of Arts to establish criteria for students in the B.A. Integrated Studies program regarding Dean's Honour List and Degree with Distinction.

Observations:

1. The Provost approved implementation of the 2010 B.A. Integrated Studies program effective September 2010.
2. Students in the B.A. General, B.A. Advanced and B.A. Honours degree programs are eligible for Dean's Honour List and Degree with Distinction. Since the degree regulations governing the B.A. Integrated Studies degree closely align with the regulations governing the B.A. General degree, the Faculty of Arts proposes that the same awards with equivalent eligibility criteria be made available for students in the B.A. Integrated Studies degree program.
3. To include students in the B.A. Integrated Studies program, the Calendar entries for the awards would be modified as follows:

Dean's Honour List

To qualify for this list a student *in an Arts degree program* must complete at least 9 credit hours offered by the University of Manitoba during a term and attain a minimum term average of 3.55. The notation "Dean's Honour List" will be included on the student's transcript.

With Distinction

Students graduating with a B.A. General and *a B.A. Integrated Studies* degree as a first degree will have their degree granted "With Distinction" if they have a minimum Degree Grade Point Average of 3.80 on all coursework taken at the University of Manitoba and provided a minimum of 60 credit hours of acceptable coursework is completed at the University of Manitoba.

Recommendations

The Senate Committee on Instruction and Evaluation recommends:

THAT Senate approve the modification to the Dean's Honour List and Degree with Distinction criteria in the Faculty of Arts to include students in the B.A. Integrated Studies program.

Respectfully submitted,

Dr. Karen Grant, Chair
Senate Committee on Instruction and Evaluation

/mb

<p><u>Comments of the Senate Executive Committee:</u> The Senate Executive Committee endorses the report to Senate.</p>



UNIVERSITY
OF MANITOBA

OFFICE OF THE
VICE-PRESIDENT (RESEARCH)

207 Administration Building
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-6915
Fax (204) 474-7568
www.umanitoba.ca

MEMORANDUM

TO: Mr. Jeff Leclerc, University Secretary

FROM: Digvir Jayas, Vice-President (Research)
and Chair, Senate Committee on University Research

DATE: October 15, 2010

SUBJECT: Proposal to establish a Professorship in Neurobiology Research

Attached is the proposal to establish a Professorship in Neurobiology Research. The Vice-President (Academic) and Provost, and the Senate Committee on University Research (SCUR), have endorsed this proposal, in accordance with the University's policy on *Chairs and Professorships*.

Please include this report and recommendation on the next Senate agenda. Please feel free to contact me should you require any further information.

Thank you.

DSJ/nis
Encl.

Comments of the Senate Executive Committee:
The Senate Executive Committee endorses
the report to Senate.

CC: S. Johansson / N. Schneide



UNIVERSITY
OF MANITOBA

Office of the
Vice-President (Academic) & Provost

208 Administration Building
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 480-1408
Fax (204) 275-1160

July 6, 2010

To: Digvir Jayas, Vice-President (Research)
From: Joanne C. Keselman, Vice-President (Academic) and Provost
Re: Professorship in Neurobiology Research

proposal for

Dr. J. Dean Sandham, Dean of the Faculty of Medicine, has provided a letter of support for the proposal to establish a professorship in neurobiology research. This professorship aligns with strengths in a number of departments and will be housed in the Kleysen Institute of Advanced Medicine..

The policy on Chairs and Professorships specifies that:

- (1) the chair be established consistent with the academic goals and objectives of the University;
- (2) the chair be fully funded from external sources, rather than University operating funds, and that the funds be sufficient to cover the salary and benefits of the incumbent and provide for an appropriate level of unrestricted research/scholarly support;
- (3) the funds for the chair be provided by way of an endowment or through a schedule of annual expendable gifts for a defined period of not less than five years, or by an appropriate combination of endowment and annual expendable gifts;
- (4) the chair shall be attached to a department, faculty, school, college, centre or institute of the University, and have goals consistent with the unit to which it is attached;
- (5) the establishment of the chair is not tied to the appointment of a particular individual;
- (6) individuals appointed to the chair normally shall have the academic qualifications commensurate with an appointment at the rank of Professor; and
- (7) the initial term of the appointment of the chair shall be 3-5 years, and if renewal is permitted, such renewal shall be subject to a successful performance review and the availability of funds.

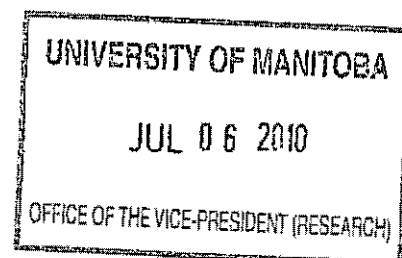
The proposed professorship in neurobiology satisfies all of the above requirements. The funding for the chair shall be derived from a \$1 million endowment fund established in the Faculty of Medicine.

I am in support of the proposal from Medicine, and request that you present it to the Senate Committee on University Research for consideration and recommendation to Senate and then to the Board of Governors.

If you have any questions or concerns, I would be pleased to meet with you.

/encl.

c. Dr. B. Postl, Dean, Faculty of Medicine





UNIVERSITY
OF MANITOBA

Faculty of Medicine



Office of the Dean
260 Brodie Center
727 McDermot Avenue
Winnipeg, Manitoba
Canada R3E 3P5
Telephone (204) 789-3557
Fax (204) 789-3928

May 27, 2010

Dr. Joanne Keselman
Vice-President (Academic) & Provost
208 Administration Building
Fort Garry Campus
WINNIPEG, Manitoba

Dear Dr. Keselman:

RE: Professorship in Neurobiology

The Faculty of Medicine is pleased to strongly endorse and recommend the development of a Professorship in Neurobiology.

The development of the neurobiology research programme is aligned with the Faculty, WRHA, Provincial and National and CIHR priorities for research development. It links extremely well with the new Kleysen Institute for Advanced Medicine and the state-of-art investigation and treatment facilities in that centre and the strong clinician scientists available to do the work.

The proposed Professorship also aligns well with Faculty investment in five new positions in Neurobiology to be located in the Kleysen Institute for Advanced Medicine and start-up research funding that we have applied to this programme. The programme will be a joint endeavour of the WRHA/Health Sciences Centre site and the Faculty of Medicine and will be a banner programme for the research element of the academic health sciences network under the governance of the Joint Operating Division.

.../2

Dr. Joanne Keselman
May 27, 2010
Page Two

Some of the most exciting work in modern biological research is occurring in understanding of both chronic and acute neurological disease. The presence of this Professorship will allow us to attract a strong academic leader for the programme and allow recruitment of very high quality candidates on a national/international basis. It will also provide a leadership role for the development of graduate basic science and clinical students.

In summary, we are delighted to support the creation of this Professorship.

Yours truly

A handwritten signature in black ink, appearing to read "J. Dean Sandham". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

J. Dean Sandham, MD FRCPC FACP
Dean

JDS:min

**PROPOSAL TO ESTABLISH A PROFESSORSHIP
IN NEUROBIOLOGY RESEARCH,
FACULTY OF MEDICINE,
UNIVERSITY OF MANITOBA**

SUMMARY:

The Neurobiology Research Program currently under development in the faculty of medicine is a collaborative project between the Winnipeg Regional Health Authority, Health Sciences Center with governance and oversight to be provided by the Joint Operating Division. The program will be housed in the new Kleysen Institute of Advanced Medicine. Recruits to the program will be expected to develop independently funded research programs in neurobiology in such areas as: neuropharmacology, developmental neurobiology, neurological and psychiatric disease, neuroinflammation, cerebrovascular biology, stroke, neurotrauma, and regenerative neuroscience. All candidates will be expected to develop a strong collaboration in translational research with clinical departments.

The proposed professorship will be at an essential academic leadership role within the program.

TYPE OF APPOINTMENT:

Professorship

NAME OF PROFESSORSHIP:

Professorship in Neurobiology Research

PURPOSE AND OBJECTIVES OF PROFESSORSHIP:

The purpose of the Professorship is to enable a faculty member to dedicate time and resources to their research program. The Professorship will allow the Neurobiology Research Program to recognize excellence and to hire or retain an outstanding faculty member with a leadership role.

RELATIONSHIP TO THE PROPOSING UNIT

The recipient of the professorship will be a full-time integral member of the Neurobiology Research Program and will report to the Director of The Neurobiology Research Program

THE METHOD BY WHICH THE PROFESSORSHIP WILL BE FUNDED:

The professorship will be funded by a ONE MILLION (\$1,000,000.00) DOLLAR endowment created with funds raised by the Faculty of Medicine.

GENERAL AND SPECIFIC REQUIREMENTS FOR THE PROFESSORSHIP:

The individual holding the Professorship will normally hold a full time appointment in the Faculty of Medicine at the Professor level. The individual will have a PhD and/or MD. The successful applicant will be actively involved in and a member of Neuroscience Research Program.

TERM OF APPOINTMENT:

The Professorship will be awarded on a competitive basis for a five-year period. An interim review of the incumbent will occur at two years and a complete review at five years.

SELECTION COMMITTEE:

The Selection Committee will be appointed by the Dean and consist of the Dean Of Faculty of Medicine (or designate), the Associate Dean (Research), Director of the Neuroscience Research Program, one graduate student selected by the Graduate Students Association, and up to three other members of the Faculty of Medicine appointed by the Dean

OTHER PROVISIONS:

It is expected that the initial endowment will be sufficient to support a professorship with the commitment of the program and the faculty to continue fundraising to increase the endowment sufficiently to convert the professorship to a chair in the future.

May 23, 2010

JDS



UNIVERSITY
OF MANITOBA

OFFICE OF THE
VICE-PRESIDENT (RESEARCH)

207 Administration Building
Winnipeg, Manitoba
Canada R3T 2N2
Telephone (204) 474-6915
Fax (204) 474-7568
www.umanitoba.ca

MEMORANDUM

TO: Mr. Jeff Leclerc, University Secretary

FROM: Digvir Jayas, Vice-President (Research)
and Chair, Senate Committee on University Research

DATE: November 3, 2010

SUBJECT: Periodic Review of Research Centres and Institutes: Manitoba Centre for Hellenic Civilization

Attached is a letter received from Dr. Egan regarding the Manitoba Centre for Hellenic Civilization. The Senate Committee on University Research (SCUR), according to the Policy on *Research Centres, Institutes, and Groups* has reviewed the letter. Due to the absence of ongoing financial support, it has been recommended that the centre close. SCUR has agreed with this recommendation.

Therefore,

On behalf of the Senate Committee on University Research, I am recommending to Senate:

That the Manitoba Centre for Hellenic Civilization cease operations as a Research Centre effective immediately.

As outlined in the letter, the Faculty will be reviewing the endowment fund agreement and looking to implement other appropriate uses of the funds. Please include this report and recommendation on the next Senate agenda. Please feel free to contact me should you require any further information.

Thank you.

DSJ/nis
Encl.

Comments of the Senate Executive Committee:
The Senate Executive Committee endorses
the report to Senate.



UNIVERSITY
OF MANITOBA

UNIVERSITY OF MANITOBA

SEP 16 2010

OFFICE OF THE VICE-PRESIDENT (RESEARCH)

Department of Classics

4.3
University College
220 Dysart Road
Winnipeg, Manitoba
Canada R3T 2M8
Telephone (204) 474-9502
Fax (204) 474-7684
classics@umanitoba.ca

September 14, 2010

Dr. Digvir Jayas
Vice-President (Research)
University of Manitoba

Dear Dr. Jayas;

Re: Report on the University of Manitoba Centre for Hellenic Civilization

I make this report as the person who has served as Director or Acting Director of the CHC since the sudden departure of the founding Director, Dr. M. Cosmopoulos; in 2001 until the end of June 2010.

The Centre's activities have of necessity been very limited for the past three and a half years or so. Shortly after the Centre's mandate had been renewed by Senate for a second five-year period, the Onassis Foundation, whose generous support had been a mainstay of the Centre's operation since its inception, withdrew that support abruptly citing "other priorities." The announcement came only weeks after I had received 'unofficial' assurances that our most recent application for annual assistance had been successful. The discontinuation of the Foundation's annual grants means that CHC has no way of maintaining its programs which included sponsorship of visiting scholars, instruction in Modern Greek, support of scholarly publications in Hellenic studies, assistance to academic conferences and funding of the University's memberships in the Canadian Academic Institute in Athens and the American School of Classical Studies in Athens and acquisition of research materials such as library books and (by license) the *Thesaurus Linguae Graecae Digital Library*. It has also meant an inability to continue providing an honorarium to an Acting Director, Dr. P. Halamandaris of Brandon University, who provided CHC with valuable assistance in liaison with the local Hellenic community and with ministries of the government of Greece. In addition the Centre has lost the means of funding any release time from teaching for the Director and for hiring students as part-time clerical assistants. The CHC's modest endowment does not yield enough interest to cover even a fraction of such activities and services.

The full impact of the Onassis Foundation's withdrawal was delayed for about a year as many financial provisions had been made in advance from the previous year's grant. Twelve months later, though, we were in a position where only routine house-keeping operations were possible and that only with the services of an unremunerated

Director and with contributions of supplies and clerical support from the Department of Classics, the Director's home department.

Under the circumstances outlined above I, as Acting Director, met with Prof. Joyal, Head of the Classics Department and Dr. R. Sigurdson, Dean of Arts in June of this year to discuss procedures for closing the Centre while also protecting its achievements and ensuring that such resources as it has would continue to serve the same academic interests for which the Centre was established. We were agreed that in the absence of ongoing financial support it would be fruitless and pointless to ask Senate to accord CHC a renewed mandate when the present one expires. Such support is of course an explicit *sine qua non* for the approval of University Research Centres. We agreed also that the Centre's endowment (which the Director had decided not to deplete for any purposes during the past several years) would appropriately be converted to a fund supporting public lectures by distinguished scholars (under the rubric of the *U. of M. Hellenic Civilization Lectures*). This would be a permanent contribution of CHC to Hellenic studies at the University and consistent with the Centre's original mission. The lectureship is to be administered by the Department of Classics, the seat of most of the University's Hellenists, but the lecture topics may pertain to Hellenic Civilization of any time period. At the same meeting it was agreed that the two endowed scholarships administered by CHC would come under the aegis of the Department of Classics and, subject to the consent of the donors and the University Awards office, that the terms of the competitions would be changed in the interests of clarity and simplicity of administration.

At the end of the meeting it was agreed that the Dean's office would initiate appropriate action with your office for closure of the Centre and reassignment of its endowment, while the Department of Classics would draft proposed revisions to the terms of the Centre's scholarships. That, to the best of my knowledge, is how matters now stand. It is my expectation that the Centre will officially cease to exist at the latest with the expiry of its present mandate, or earlier, once the anticipated arrangements have been made regarding its endowment and scholarships.

Respectfully,



Rory B. Egan
Professor of Classics

cc. Prof. M.A. Joyal
Dr. R. Sigurdson

Report of the Senate Committee on the Calendar Regarding the Final Print Version of the Calendar

Preamble:

1. The terms of reference for the Senate Committee on the Calendar are found on the web at http://umanitoba.ca/admin/governance/governing_documents/governance/sen_committees/496.htm
2. The Committee is charged with preparing the University Calendars and providing advice on matters referred to it concerning the University Calendars.
3. The Committee met on May 7, 2010, and October 29, 2010 to reconsider the time frame for the final print Calendar and to determine publishing deadlines for the web Calendar.

Observations:

1. On October 7, 2009, Senate approved a proposal to designate the online version as the official General Academic Calendar commencing the 2011-2012 academic session and that the 2011-2012 Calendar be the final print Calendar published.
2. A Calendar management software package has been purchased and the Registrar's Office is currently developing a new online Calendar for the 2011-2012 academic year. It is anticipated that this Calendar will go live on April 1, 2011.
3. It was noted that the number of print Calendars distributed in recent years has dropped dramatically and that there is a significant cost savings to ceasing publication of a print Calendar.
4. The Committee was assured that a pdf copy of the web Calendar would be available for downloading as required.
5. The Committee observed the necessity of having a period of flexibility for modifications to the web Calendar and recommended that from April 1 to June 30 of each year the web Calendar be designated: "*subject to change without notice*".
6. The Committee observed the necessity of having a concrete version of the web Calendar and determined that the period of July 1 to March 31 of every year be designated the "*official version*" of the Calendar. No modifications would occur during this period.

Recommendations:

The Senate Committee on the Calendar recommends:

THAT Senate approve the General Academic Calendar be offered as an online version only commencing the 2011-2012 academic session.

THAT Senate approve that the web Calendar remain concrete from July 1 – March 31 of every year and be designated as the "official version"; and that the web Calendar remain flexible for the period April 1 – June 30 and be designated "subject to change without notice".

Respectfully submitted,

Mr. Jeff M. Leclerc, Chair, Senate Committee on the Calendar

Comments of the Senate Executive Committee:
The Senate Executive Committee endorses the report to Senate.

Report of the Senate Committee on Course and Curriculum Changes Part B – Submitted to Senate for Ordinary Debate

Preamble

1. The terms of reference for the Senate Committee on Curriculum and Course Changes (SCCCC) are found on the website at:
http://www.umanitoba.ca/admin/governance/governing_documents/governance/sen_committees/497.htm. SCCCC is “to recommend to Senate on the introduction, modification or abolition of undergraduate programs, curricula or courses”.
2. This part of the report contains observations and recommendations on course change proposals for the Clayton H. Riddell Faculty of Environment, Earth and Resources where the net change proposed is more than nine credit hours. The Senate Planning and Priorities Committee also considered this proposal.

Observations

1. The Committee noted that the Faculty had conducted a review of the curricula including extensive consultation within the units prior to being approved by Faculty Council.
2. The Committee noted that the guiding principles used for the review included the maintenance of challenging and accessible undergraduate programs and the removal of duplication and sharing of teaching resources.
3. The Committee further noted that this review enabled the Faculty to identify courses that were no longer necessary in the curricula and to propose changes which have led to a significant net decrease in credit hours.
4. Department of Environment and Geography

The department is proposing the deletion of fifteen courses: **ENVR 2170 Environmental Problem Solving (3)**, **ENVR 2650 Introduction to Environmental and Natural Resources Policy and Law (3)**, **ENVR 3150 Environmental Responsibilities (3)**, **GEOG 1200 Introductory Geography (6)**, **GEOG 2410 Geography of Tourism and Recreation (6)**, **GEOG 2440 Geography of Natural Hazards (6)**, **GEOG 2450 The Making of the Prairie Landscape (6)**, **GEOG 2480 Population Geography (6)**, **GEOG 2620 Geography of Environmental Change (3)**, **GEOG 3610 Climate Change (6)**, **GEOG 3680 Research Methods in Geography (6)**, **GEOG 3700 Canada: The Making of the Human Landscape (6)**, **GEOG 4320 Modelling the Physical Climate (3)**, **GEOG 4690 Natural Hazards and Disasters (3)**, and **GEOG 4710 Geography of Aging and the Elderly (3)**; the introduction of eleven courses: **ENVR 2270 Environmental Problem Solving and Scientific Thinking (3)**, **ENVR 3160 Environmental Responsibilities and the Law (3)**, **GEOG 2270 Natural Hazards (3)**, **GEOG 2330 Place, Populations and Mobility: Geographic Perspectives (3)**, **GEOG 2370 Geography of Tourism (3)**, **GEOG 2900 Geography of Canadian Prairie Landscapes (3)**, **GEOG 3390 Introduction to Climate Change and its Causes (3)**, **GEOG 3640 Social Geography (3)**, **GEOG 3810 Quantitative Research Methods in**

Comments of the Senate Executive Committee:

The Senate Executive Committee endorses the report to Senate.

Geography (3), GEOG 3900 Geography of Manitoba (3), GEOG 4330 Concepts in Atmospheric Modeling (3); and the modification of two courses: ENVR 4500 Thesis Project in Environmental Science and Studies (6), and GEOG 4390 Global Climate Change (3).

Department of Geological Sciences

The department proposes the deletion of five courses: **GEOL 3290 Metamorphism, Structure and Tectonics (3), GEOL 4290 Topics in Environmental Geoscience (3), GEOL 4630 Geolimnology (3), GEOL 4660 Volcanology (3), and GEOL 4830 Remote Sensing and Geological Information Systems (3);** the introduction of three courses: **GEOL 3440 Structure and Metamorphism (3), GEOL 3450 Hydrogeology (3), and GEOL 4360 Mineral Exploration Techniques (3);** and the modification of two courses: **GEOL 4670 Global Tectonics (3), and GEOL 4910 Advanced Field Mapping (3).**

Recommendation

The Senate Committee on Curriculum and Course Changes recommends

THAT Senate approve the curriculum and course changes from the Clayton H. Riddell Faculty of Environment, Earth and Resources.

Respectfully submitted,
Dean H. Frankel, Chair
Senate Committee on Curriculum and Course Changes

/mb

Clayton H. Riddell Faculty of Environment, Earth and Resources

Department of Environment and Geography

Deletions:

ENVR 2170 Environmental Problem Solving Cr.Hrs. 3	-3
ENVR 2650 Introduction to Environmental and Natural Resources Policy and Law	-3
ENVR 3150 Environmental Responsibilities Cr.Hrs. 3	-3
GEOG 1200 Introductory Geography Cr.Hrs. 6	-6
GEOG 2410 Geography of Tourism and Recreation Cr.Hrs. 6	-6
GEOG 2440 Geography of Natural Hazards Cr.Hrs. 6	-6
GEOG 2450 The Making of the Prairie Landscape Cr.Hrs. 6	-6
GEOG 2480 Population Geography Cr.Hrs. 6	-6
GEOG 2620 Geography of Environmental Change Cr.Hrs. 3	-3
GEOG 3610 Climate Change Cr.Hrs. 6	-6
GEOG 3680 Research Methods in Geography Cr.Hrs. 6	-6
GEOG 3700 Canada: The Making of the Human Landscape Cr.Hrs. 6	-6
GEOG 4320 Modelling the Physical Climate Cr.Hrs. 3	-3

GEOG 4690 Natural Hazards and Disasters Cr.Hrs. 3	-3
GEOG 4710 Geography of Aging and the Elderly Cr.Hrs. 3	-3

Introductions:

ENVR 2270 Environmental Problem Solving and Scientific Thinking Cr.Hrs. 3	+3
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A course to help students develop skeptical and scientific thinking around environmental issues and problems. A multi-disciplinary approach will be taken, using current topical issues as examples. Prerequisites: [CHEM 1310 or CHEM 1311 (002.1310)](C) and [BIOL 1030 or BIOL 1031 (071.125)](C).

ENVR 3160 Environmental Responsibilities and the Law Cr.Hrs. 3	+3
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Environmental responsibilities and their legal framework in terms of policies, legislation, standards and guidelines and the tools to manage responsibility are examined through lectures, case study review and discussion. Environmental liability and due diligence are reviewed in relation to responsibilities of organizations and individuals. Strategies to manage environmental liabilities, including environmental and risk assessment, are also discussed. Cannot be held for credit with ENVR 3150 (128.315), ENVR 2650, ABIZ 3550. Prerequisite: A minimum grade of C in ENVR 2000 or written permission of the department head.

GEOG 2270 Natural Hazards (PS) Cr.Hrs. 3	+3
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Environmental hazards to human settlement and economy are examined with particular attention to meteorological, soil erosion, mass wasting, earthquake and volcanic phenomena. Not to be held with GEOG 2440. Prerequisite: A grade of C or better in one of: GEOG 1290, GEOG 1340, GEOL 1410, or the permission of the department head.

GEOG 2330 Place, Populations and Mobility: Geographic Perspectives (HS) Cr.Hrs. 3	+3
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An examination of the factors controlling the number and distribution of human population. Variations in fertility, mortality and mobility will be analyzed and the causes and consequences reviewed. May not be held for credit with GEOG 2480 (053.248). Prerequisite: a grade of C or better in 1000 level Geography course or permission of department head.

GEOG 2370 Geography of Tourism (HS) Cr.Hrs. 3	+3
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This course examines the social, economic and environmental dimensions of tourism and recreation. Historical and contemporary experiences from around the world will be studied. May not be held for credit with GEOG 2410 (053.241). Prerequisite: a grade of C or better in GEOG 1200 or GEOG 1280 or permission of department head.

GEOG 2900 Geography of Canadian Prairie Landscapes (A) Cr.Hrs. 3	+3
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This course introduces students to the various geographical themes, concepts and processes within the context of the natural and anthropogenic development of the Canadian prairie region. It traces the evolution of the prairie landscape. It will focus on academic writing in the discipline. Not to be held with GEOG 2450. Prerequisites: A grade of C or better in 1000 level Geography course, or the permission of department head.

GEOG 3390 Introduction to Climate Change and Its Causes (PS) Cr.Hrs. 3	+3
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The primary objective of this course is to provide students with a general understanding of the physical and astronomical factors that drive global climate change. Focus will be given to current and future climate change in the context of observations and modeling. May not be held for credit with GEOG 3610. Prerequisites: A minimum of three credit hours from Geography or Environment courses, or written permission of the department head.

GEOG 3640 Social Geography (HS) Cr.Hrs. 3 +3
This course provides an intermediate-level assessment of current geographical approaches to society and environment. Students are exposed to critical realist, social constructionist, Marxist, feminist and post-Colonial traditions as they are applied to environmental and social justice, globalization and public health. It includes discussion and a community-based learning project.

GEOG 3810 Quantitative Research Methods in Geography (TS) Cr.Hrs. 3 +3
This course focuses on the quantitative analytical methods available for the interpretation on physical and human geography applications. Cannot be held for credit with the former GEOG 3680 (053.368). Prerequisite: GEOG 2530 (053.253) or STAT 1001 (005.100) or written permission of department head.

GEOG 3900 Geography of Manitoba (A) Cr.Hrs. 3 +3
A regional study of Manitoba emphasizing the unique character and diversity of Manitoba's cultural landscapes. The historical, social, cultural, economic and political distinctiveness along with the impact of European settlement and aboriginal displacement will be discussed. Prerequisite: a grade of C or better in GEOG 2900 or permission of department head.

GEOG 4330 Concepts in Atmospheric Modeling Cr.Hrs. 3 +3
This course will primarily focus on numerical modeling applications and techniques of the Earth's atmosphere with an emphasis on weather prediction. This includes understanding basic modeling terminology, numerical schemes, structure of models, types of models, what is required to run a model, and an introduction to data assimilation and ensemble techniques to weather prediction. May not be held for credit with GEOG 4320. Pre- or co-requisites: GEOG 3310 and GEOG 3320.

Modifications:

ENVR 4500 Thesis Project in Environmental Science and Studies Cr.Hrs. 6
(formerly 128.450) A research thesis project in any aspect of environmental science or environmental studies, chosen in consultation with the course coordinator and an appropriate supervisor, typically a faculty member. Written reports and oral presentation of the results of the thesis project will be required. The course is normally available only to final year students in the Environmental Science Honours or Environmental Studies Honours Program. Prerequisite: permission of course coordinator and a GPA of 3.0 in the last 30 credit hours.

GEOG 4390 Global Climate Change Cr.Hrs. 3
(formerly 053.439) Students will be introduced to the complexities of climate changes through a series of introductory lectures and reading assignments that focus on recent scientific publications and review articles (mathematic skills are not required). Both sides of the climate change debate will be addressed in weekly assignments, and students will defend their conclusions in classroom discussion. Each student will take on a project in some aspect of climate change – glaciers, sea ice, temperature trends, precipitation, agriculture, animal migration, aerosols, or a regional impact. Prerequisite: a grade of C or better in GEOG 3390 (former GEOG 3610 or 053.361), or permission of department head.

NET CHANGE IN CREDIT HOURS: -36

Department of Geological Sciences

Deletions:

GEOL 3290 Metamorphism, Structure and Tectonics Cr.Hrs. 3	-3
GEOL 4290 Topics in Environmental Geoscience Cr.Hrs. 3	-3
GEOL 4630 Geolimnology Cr.Hrs. 3	-3
GEOL 4660 Volcanology Cr.Hrs. 3	-3
GEOL 4830 Remote Sensing and Geological Information Systems Cr.Hrs. 3	-3

Introductions:

GEOL 3440 Structure and Metamorphism Cr.Hrs. 3 +3
(Lab required) Structural and metamorphic geology, links between deformation and metamorphism, and the application of pressure-temperature and time paths to study metamorphic equilibria. Not to be held with the former GEOL 3290 (007.329). Prerequisites: GEOL 2440, GEOL 2520 and GEOL 3910 or permission of department.

GEOL 3450 Hydrogeology Cr.Hrs. 3 +3
(Lab required) The hydrologic cycle and basic hydrologic processes; properties of aquifers and principles of groundwater flow; well hydraulics and groundwater resource evaluation; regional groundwater flow and subsurface geology; and basic chemical hydrogeology. Not to be held with CIVL 4250. Prerequisites: [MATH 1500 or MATH 1510](C), [PHYS 1020 or PHYS 1050](C), CHEM 1300 (C), [GEOL 2060 or GEOG 2310](C), and GEOL 2530 (C).

GEOL 4360 Mineral Exploration Techniques Cr.Hrs. 3 +3
(Lab required) The course will examine methodologies used in exploration and evaluation of Canadian mineral deposits and case studies illustrating the application of these methods. Prerequisite: [GEOL 3910 or GEOL 3810](C). Recommended pre- or co-requisite: GEOL 4300.

Modifications:

GEOL 4670 Global Tectonics Cr.Hrs. 3
(Lab required)(formerly 007.467) The structure and properties of, and physical processes taking place within, the Earth's interior. Continental cratons and their margins, orogenic belts, structural and petrologic features of the ocean basins, modern diastrophism, global tectonic theories. Prerequisite: GEOL 3440 (or the former GEOL 3290)(C) or GEOL 4320(C) or consent of department.

GEOL 4910 Advanced Field Mapping Cr.Hrs. 3
(formerly 007.491) Twelve-day course developing field mapping techniques including independent mapping and interpretation and synthesis in complex geological terrains. Students are responsible for costs of room and board during the field course. May not hold with the former 007.449. offered in Summer Term. Prerequisite: GEOL 3440 (or the former GEOL 3290)(C) and GEOL 3910(C) and consent of department.

NET CHANGE IN CREDIT HOURS: -6

Clayton H. Riddell Faculty of Environment, Earth and Resources

Department of Environment and Geography

Deletions:

ENVR 2170 Environmental Problem Solving (3)
ENVR 2650 Introduction to Environmental and Natural Resources Policy and Law (3)
ENVR 3150 Environmental Responsibilities (3)
GEOG 1200 Introductory Geography (6)
GEOG 2410 Geography of Tourism and Recreation (6)
GEOG 2440 Geography of Natural Hazards (6)
GEOG 2450 The Making of the Prairie Landscape (6)
GEOG 2480 Population Geography (6)
GEOG 2620 Geography of Environmental Change (3)
GEOG 3610 Climate Change (6)
GEOG 3680 Research Methods in Geography (6)
GEOG 3700 Canada: The Making of the Human Landscape (6)
GEOG 4320 Modelling the Physical Climate (3)
GEOG 4690 Natural Hazards and Disasters (3)
GEOG 4710 Geography of Aging and the Elderly (3)

Introductions:

ENVR 2270 Environmental Problem Solving and Scientific Thinking (3)
ENVR 3160 Environmental Responsibilities and the Law (3)
GEOG 2270 Natural Hazards (3)
GEOG 2330 Place, Populations and Mobility: Geographic Perspectives (3)
GEOG 2370 Geography of Tourism (3)
GEOG 2900 Geography of Canadian Prairie Landscapes (3)
GEOG 3390 Introduction to Climate Change and its Causes (3)
GEOG 3640 Social Geography (3)
GEOG 3810 Quantitative Research Methods in Geography (3)
GEOG 3900 Geography of Manitoba (3)
GEOG 4330 Concepts in Atmospheric Modeling (3)

Department of Geological Sciences

Deletions:

GEOL 3290 Metamorphism, Structure and Tectonics (3)
GEOL 4290 Topics in Environmental Geoscience (3)
GEOL 4630 Geolimnology (3)
GEOL 4660 Volcanology (3)
GEOL 4830 Remote Sensing and Geological Information Systems (3)

Introductions:

GEOL 3440 Structure and Metamorphism (3)
GEOL 3450 Hydrogeology (3)
GEOL 4360 Mineral Exploration Techniques (3)

NET CHANGE: -42 credit hours

October 25, 2010

Report of the Senate Planning and Priorities Committee on Graduate Changes with Potential Resource Implications or Course Changes Beyond Nine Credit Hours

Preamble

1. The terms of the Senate Planning and Priorities Committee (SPPC) are found on the website at:
www.umanitoba.ca/admin/governing_documents/governance/sen_committees/508.htm wherein SPPC has the responsibility to report to Senate on departmental course changes in excess of nine credit hours.
2. The committee reviewed a proposal from the Clayton H. Riddell Faculty of Environment, Earth and Resources for a net change of -42 credit hours.

Observations

1. The Faculty has conducted extensive consultation with unit heads, curriculum committees, student advisors and the approval of Department and Faculty Councils in order to review the curricula.
2. The following guiding principles informed the process:
 - Maintenance of challenging and accessible undergraduate programs with solid, well-defined cores;
 - Removal of duplication and sharing of teaching resources;
 - Course groupings that reflected retirements, new hires, demographic changes and evolving interests of faculty and students;
 - Where possible, use of courses from elsewhere on campus within the Faculty's programs was a good thing.
3. The resultant changes amount to a net change of -42 credit hours: -36 credit hours in the Department of Environment and Geography and -6 credit hours in the Department of Geological Sciences.
4. The Committee commended the Faculty on the efforts made to optimize academic resources while maintaining quality undergraduate programs.

Recommendation

The Senate Planning and Priorities Committee recommends:

THAT Senate approve the course changes proposed by the Clayton H. Riddell Faculty of Environment, Earth and Resources.

Respectfully submitted,

Ada Ducas, Chair
Senate Planning and Priorities Committee

<p><u>Comments of the Senate Executive Committee:</u> The Senate Executive Committee endorses the report to Senate.</p>
