

MEMORIAL UNIVERSITY OF NEWFOUNDLAND
SENATE

The regular meeting of Senate was held on December 12, 2017 at 4:00 p.m. in the Lecture Theatre in the Physical Education Building, Room 2001.

46. PRESENT

The President, Dr. N. Golfman, Dr. N. Bose, Dr. R. Shea (for Mr. G. Blackwood), Dr. J. Keshen (via videoconferencing), Dr. C. Reynolds, Dr. K. Anderson, Dr. L. Bishop, Dr. H. Carnahan, Dr. M. Courage, Dr. I. Dostaler, Ms. C. Ennis-Williams, Dr. D. Hardy-Cox, Dr. T. Hennessey (via videoconferencing), Dr. G. Naterer, Mr. T. Nault, Dr. M. Piercey-Normore, (via videoconferencing), Ms. J. Porter, Dr. L. Robinson (via videoconferencing), Ms. B. Simmons, Dr. J. Simpson, Dr. M. Steele, Dr. A. Surprenant, Dr. I. Sutherland, Dr. S. Abhyankar (via videoconferencing), Ms. L. Alcock, Dr. E. Bezzina, Dr. J. Blundell, Mr. P. Brett, Dr. J. Connors, Professor A. Fisher, Dr. I. Fleming, Dr. G. George, Dr. E. Haven, Dr. J. Hawboldt, Mr. D. Howse, Dr. M. Marshall, Dr. S. McConnell, Dr. M. Mulligan, Dr. A.C. Onodenaloro, Dr. D. Peters, Ms. H. Pretty, Dr. C. Purchase, Dr. A. Rose, Dr. A. Sarkar, Dr. K. Simonsen, Ms. H. Skanes, Dr. C. Thorpe, Dr. M. Woods, Mr. A. Alkasasbeh, Ms. R. Umali, Mr. M. Barter, Mr. Y. Jabr, Ms. D. Murphy, Mr. M. O'Keefe.

**Chair of the Senate Committee on Undergraduate Studies
(Standing Invitation)**

Dr. Shannon Sullivan

The President welcomed all Senators to this meeting of Senate.

Welcome:

**New Memorial University of Newfoundland Students' Union
Representatives**

Anna Dubinski
Dawn Murphy
Yazan Jabr
Michael O'Keefe
Brad Greeley

The President congratulated Michael O'Keefe on being Newfoundland's 2018 Rhodes Scholar.

New Graduate Students' Union Representative

Rizza Umali - Executive Director of External Affairs

Attending by Invitation for the New Degree Program - Bachelor of Environment and Sustainability at the School of Science and the Environment

Dr. Gabriela Sabau, Chair of the Environment Studies Program
Dr. Robert Scott, Chair of the Sustainable Resource Management Program

The President noted that it would be appreciated if when you speak you use the microphone and introduce yourself and your constituency as Grenfell Campus Senators are joining by videoconferencing and otherwise will not be able to hear.

47. **APOLOGIES FOR ABSENCE**

Apologies were received from Dr. A. Gaudine, Dr. M. Haghiri, Dr. J. Leibel, Dr. W. Schipper, Professor D. Walsh.

48. **MINUTES**

It was moved by Dr. George, seconded by Dr. Bezzina, and carried that the Minutes of the special and regular meetings held on November 14, 2017, be taken as read and confirmed.

49. **REPORT OF THE SENATE COMMITTEE ON HONORARY DEGREES AND CEREMONIAL**

Senate moved into a closed session for this item of business in accordance with **Section IV.E.2. SENATE MEETINGS AND PROCEDURES** of the Handbook of Senate By-Laws and Procedures which reads:

Matters of a confidential nature, including honorary degrees, shall be discussed in closed session; observers are not permitted to attend closed sessions.

The names of seven candidates recommended by the Committee on Honorary Degrees and Ceremonial were presented to the Senate for awarding of doctoral degrees honoris causa. Each candidate was approved by at least a two-thirds majority vote.

CONSENT AGENDA

It was moved by Dr. Mulligan, seconded by Dr. Surprenant, and carried that the consent agenda, comprising the items listed in 50-53 below, be approved as follows:

50. Report of the Senate Committee on Undergraduate Studies

50.1 Department of Earth Sciences

Page 551, 2017-2018 Calendar, under the heading 11.5.2 Second Year, amend the section to read as follows:

“2702 Sedimentology and Stratigraphy is a study of the origin and composition of sediments with a focus on depositional processes and resulting sedimentary structures. It includes the study of environments of deposition and the stratigraphic framework of sedimentary successions. Laboratories involve local field trips, petrographic analysis, and the study of hand samples of sedimentary rocks.

CO: EASC 2030

CR: the former Geology 3070 or the former EASC 3070 or the former EASC 3701

LH: 3

PR: EASC 1002”

50.2 Department of Physics and Physical Oceanography

Page 560, 2017-2018 Calendar, under the heading 11.10 Physics and Physical Oceanography, add the following new course as follows:

“**3050 Introduction to Biophysics** focuses on theoretical and computational modeling of biological processes using tools and concepts from physics, including the statistical physics of polymers, electrostatics of aqueous solutions, free energy minimization, energy-entropy competition, random walks, diffusion, the Einstein relation and depletion forces. With these tools the course examines the physics of biological processes such as osmotic pressure in cells, folding and cooperativity of macromolecules, ligand-receptor binding, energy balance of the cell, cell membrane shapes, ion channels, and molecular motors.

PR: One of Computer Science 1510 or 1001 or PHYS 2820, and one of PHYS 2053 or Chemistry 2301.

Abbreviated Course Title: Introduction to Biophysics”

Page 496, 2017-2018 Calendar, under the heading 6.1.2 Applied Mathematics and Physics Joint Honours, amend the section to read as follows:

Department of Physics and Physical Oceanography (cont'd)

6.1.2 Applied Mathematics and Physics Joint Honours

The following courses are required:

1. English 1090 (or the former 1080) and English 1110 (or equivalent).
2. A computing course. Computer Science 1510 or 1001 is recommended.
3. Six credit hours in a science other than Mathematics or Physics (if Computer Science is chosen then Computer Science 1510 or 1001 may be counted as three of these hours).
4. Mathematics 1000, 1001, 2000, 2050, 2051, 2260 (~~or 3260~~), 3000, 3001, 3132, 3202, 3210,
5. At least one of Mathematics 2130 or Mathematics 2320.
6. Physics 1050 (or 1020), 1051, 2053, 2055, 2750 (or 2056), 2820, 3220, 3230, 3400, 3500, 3750, and one of 3800 or 3900.
- ~~7. Three additional credit hours chosen from courses numbered 3000 or higher that are offered by the Department of Physics and Physical Oceanography.~~
8. One of Mathematics 3161 or Physics 3820 and one of Mathematics 4160, or Physics 3820 and Physics 4820.
9. Physics 490A/B or Mathematics 419A/B.
10. Twelve additional credit hours chosen from courses numbered 4000 or higher that are offered by the Department of Mathematics and Statistics or the Department of Physics and Physical Oceanography. At least 3 credit hours must be selected in each of Applied Mathematics and Physics.
11. ~~A sufficient number of elective courses to bring the degree to a total of 120 credit hours.~~ Twelve credit hours in applicable elective courses.

The topic for the Honours project or thesis, Mathematics 419A/B or Physics 490A/B must be chosen with the prior approval of both departments.”

50.3 Department of Chemistry

Page 544, 2017-2018 Calendar, under the heading 11.3 Chemistry, amend the section to read as follows:

“2400 Introductory Organic Chemistry I is a course on bonding involving carbon; conformations and stereochemistry; introduction to functional groups and nomenclature; properties, syntheses and reactions

Department of Chemistry (cont'd)

of hydrocarbons, alkyl halides, alcohols, and ethers.

AR: attendance is required in the laboratory component of this course. Failure to attend may result in a failing grade or deregistration from the course.

CR: CHEM 2440

LH: 3

OR: 2 hours of tutorial weekly

PR: Science 1807; a minimum 60% in CHEM 1051; or CHEM 1010 and 1011 with a grade of at least 80% in each; or CHEM 1011 with a grade of at least 85%; or CHEM 1001 (or the former 1031) with a grade of at least 65%

2401 Introductory Organic Chemistry II is an introduction to the interpretation of mass, infrared, ^1H and ^{13}C NMR spectra; properties, syntheses and reactions of simple aromatic and heteroaromatic compounds, ketones, aldehydes, amines, carboxylic acids and their derivatives; aldol and related reactions.

AR: attendance is required in the laboratory component of this course. Failure to attend may result in a failing grade or deregistration from the course.

CR: CHEM 2440

LH: 3

OR: 2 hours of tutorial weekly

PR: CHEM 2400

4250 Special Topics in Inorganic Chemistry is a course for senior level undergraduate students and covers one or a number of specialized topics of current interest in inorganic chemistry.

PR: CHEM 3210 or 3211

4450 Special Topics in Organic Chemistry is a course for senior level undergraduate students and covers one or a number of specialized topics of current interest in organic chemistry.

PR: CHEM 3411

~~4150 Advanced Spectrometric Techniques~~ **Special Topics in Analytical Chemistry** is a course for senior level undergraduate students and covers one or a number of specialized topics of current interest in analytical chemistry.

PR: CHEM 3110

4350 Special Topics in Physical Chemistry is a course for senior level undergraduate students and covers one or a number of specialized topics of current interest in physical chemistry. ~~Advanced Physical~~

~~Chemistry III: Selected Topics in Physical Chemistry~~ is discussion of selected topics of current interest in physical chemistry and chemical

Department of Chemistry (cont'd)

~~physics, given in lecture or seminar form. Representative topics are crystal structure and x-ray crystallography, data processing and modelling, microwave spectroscopy, quantum chemical calculations. Arrangements to take this course should be made during the previous academic year.~~

PR: CHEM 3303”

50.4 Department of Economics

Page 367, 2017-2018 Calendar, under the heading 14.5 Economics, add the following new course:

“4200 Game Theory is an introduction to game theory and strategic thinking. Ideas such as dominance, backward induction, Nash equilibrium, stability, commitment, credibility, and asymmetric information are discussed and applied to games played in class and to examples drawn from economics, politics, the movies, and elsewhere.

PR: ECON 3000”

50.5 Department of English

Page 374, 2017-2018 Calendar, under the heading 14.6.1 Communication Studies, add the following new course:

“Communication Studies 2813: Reading Images (same as ENGL 2813) introduces students to the field of visual culture and familiarizes them with both the vocabulary and the methodologies to examine images critically.

CR: English 2813

PR: 6 credit-hours in English at the 1000-level

Abbreviated Course Title: Reading Images”

Page 369, 2017-2018 Calendar, under the heading 14.6 English, add the following new course:

“English 2813: Reading Images (same as CMST 2813) introduces students to the field of visual culture and familiarizes them with both the vocabulary and the methodologies to examine images critically.

CR: Communication Studies 2813

PR: 6 credit-hours in English at the 1000-level

Abbreviated Course Title: Reading Images”

Page 325, 2017-2018 Calendar, under the heading 13.6.5.4 Course List, amend Table 1 Core Faculty of Humanities and Social Sciences Courses Approved for the Major in Communication Studies as follows:

Department of English (cont'd)

Table 1 Core Faculty of Humanities and Social Sciences Courses Approved for the Major in Communication Studies

1000 and 2000 Level Courses	3000 Level Courses	4000 Level Courses
CMST 2000, 2001 <u>CMST 2813 or English 2813</u> Linguistics 1100 Philosophy 2582 Sociology 2120, 2210	Anthropology 3630 or Sociology 3630 CMST 3010-3020 Philosophy 3620 Political Science 3350, 3860	CMST 4000, 4001, 4010-4020 Political Science 4860 Sociology 4107

Page 303, 2017-2018 Calendar, under the heading 8.8.4 Regulations for the Certificate in Film Studies, amend Table 1 Faculty of Humanities and Social Sciences Courses for the Certificate in Film Studies as follows:

Table 1 Faculty of Humanities and Social Sciences Courses for the Certificate in Film Studies

Foundation Theory Courses	1000 and 2000-level Film Studies Courses	3000-level Film Studies Courses
Communication Studies 2001	Anthropology 2493	Anthropology 3404
English 2813 , 2850, 2851	Philosophy 2581	Classics 3700
<u>English 2813 or Communication Studies 2813</u>	Religious Studies 1022	<u>English 3813</u>
		<u>English 3828 or Medieval Studies 3828</u>
		French 3506
		German 3000, 3001, 3002, 3003
		History 3790, 3795
		Russian 3003, 3023
		Spanish 3300

Page 369, 2017-2018 Calendar, under the heading 14.6 English, amend the section as follows:

“English 3828 –The Middle Ages and the Movies (same as MST 3828) explores the ways medieval sources are represented in modern films, and how modern cultural and political concerns influence how these medieval sources are presented. Through a selection of medieval films and their historical and literary inspirations, we will see how films shape our present-day concepts of history, identity, freedom, knowledge, and creativity.

PR: 3 CH in English at the 2000-level

CR: Medieval Studies 3828”

Page 394, 2017-2018 Calendar, under the heading 14.24.7 Medieval Studies, amend the section as follows:

Department of English (cont'd)

“Medieval Studies 3828–The Middle Ages and the Movies (same as ENGL 3828) explores the ways medieval sources are represented in modern films, and how modern cultural and political concerns influence how these medieval sources are presented. Through a selection of medieval films and their historical and literary inspirations, we will see how films shape our present-day concepts of history, identity, freedom, knowledge, and creativity.

PR: 3 CH in English at the 2000-level

CR: English 3828”

Page 369, 2017-2018 Calendar, under the heading 14.6 English, amend the section as follows:

“3811-3830 (Excluding 3813, 3816, 3817, 3819, 3828 and 3830) Special Topics will have topics to be studied announced by the Department.

PR: successful completion of two second-year English courses”

Page 347, 2017-2018 Calendar, under the heading 13.15.7.5 Course List, amend Table 1 Core Faculty of Humanities and Social Sciences Courses for the Major or Minor in Medieval Studies as follows:

Table 1 Core Faculty of Humanities and Social Sciences Courses for the Major or Minor in Medieval Studies

2000 Level Courses	3000 Level Courses	4000 Level Courses
MST 2000	MST 3000 or English 3002 or History 3000 or Religious Studies 3000	MST 3000-4020
MST 2001 or History 2320	MST 3001 or Archaeology 3001 or Folklore 3001 or History 3020	MST 4021 or Classics 4202
MST 2002 or History 2330	MST 3003 or Religious Studies 3560	
	MST 3004 or Philosophy 3760	
	MST 3006 or English 3006 or Gender Studies 3001	
	<u>MST 3828 or English 3828</u>	
	MST 3710-3729	

Department of English (cont'd)

Page 323, 2017-2018 Calendar, under the heading 13.6.3.4 Courses to Fulfill Requirements for the Minor, Major and Honours Programs in English, amend Table 1 English Courses to Fulfill Requirements for the Minor, Major and Honours Programs in English as follows:

Table 1 English Courses to Fulfill Requirements for the Minor, Major and Honours Programs in English

Level	Canadian Literature	American Literature	Pre-19 th Century Literature	19 th Century Literature	20 th and 21 st Century Literature
2000-Level	2150, 2251, 2160	2160, 2216, 2217, 2218		2212	2122, 2150, 2151, 2212, 2811, 2813, 2815
3000-Level	3152, 3153, 3155, 3156, 3157, 3158, 3820, 3848	3260, 3261, 3262, 3263, 3848	3001, 3002, 3006, 3021, 3022, 3130, 3190, 3819, <u>3828</u>	3152, 3160, 3161, 3172, 3175, 3190, 3710, 3711, 3819, 3830	3100, 3152, 3153, 3155, 3156, 3190, 3260, 3265, 3711, 3713, 3714, 3811, 3819, 3820, 3830, 3843, 3844, 3848
4000-Level	4821, 4822, 4850, 4851	4271, 4272	4000, 4010, 4030, 4040, 4041, 4050, 4051, 4210, 4211, 4271, 4500, the former 4501, 4600, 4601	4959, 4051, 4060, 4061, 4070, 4271, 4300, the former 4805, 4817, 4821, 4851	4070, 4071, 4080, 4101, 4272, 4300, 4817, 4819, 4821, 4822, 4850

Page 369, 2017-2018 Calendar, under the heading 14.6 English, amend the section as follows:

“English 3913: ~~Write to Speak~~ Speechwriting (same as Communication Studies 3913) develops the student’s ability to speak on all occasions, formal and informal, expected and unexpected. Students will deliver speeches of varying types and lengths on a regular basis throughout the semester.

CR: Communication Studies 3913

~~Prerequisites: English 2010 or English 2020 (or equivalent). PR: 3 credit hours in English at the 1000-level. Class size will be limited.~~

Abbreviated Course Title: Speechwriting”

Page 374, 2017-2018 Calendar, under the heading 14.6.1 Communication Studies, amend the section as follows:

“Communication Studies 3913: Speechwriting (same as English 3913) develops the student’s ability to speak on all occasions, formal and informal, expected and unexpected. Students will deliver speeches of varying types and lengths on a regular basis throughout the semester.

Department of English (cont'd)

CR: English 3913

PR: 3 credit hours in English at the 1000-level.

Abbreviated Course Title: Speechwriting”

Page 325, 2017-2018 Calendar, under the heading 13.6.5.4 Course List, amend Table 1 Core Faculty of Humanities and Social Sciences Courses Approved for the Major in Communication Studies as follows:

Table 1 Core Faculty of Humanities and Social Sciences Courses Approved for the Major in Communication Studies

1000 and 2000 Level Courses	3000 Level Courses	4000 Level Courses
<ul style="list-style-type: none"> • CMST 2000, 2001 • Linguistics 1100 • Philosophy 2582 • Sociology 2120, 2210 	<ul style="list-style-type: none"> • Anthropology 3630 or Sociology 3630 • CMST 3010-3020, • <u>CMST 3913 or English 3913</u> • Philosophy 3620 • Political Science 3350, 3860 	<ul style="list-style-type: none"> • CMST 4000, 4001, 4010-4020 • Political Science 4860 • Sociology 4107

Page 369, 2017-2018 Calendar, under the heading 14.6 English, amend the section as follows:

~~“**English 4422: Stylistics** is a study of the main influences of language on literature. By far the most common kind of material studied is literary; attention is largely *text-centred*. The goal is not simply to describe the formal features of texts, but to show their functional significance for interpretation.~~

~~Prerequisites: ENGL 2390 and two third-year courses in English literature.~~

English 4422 Style in Literature is about how your writing compares to other people's. This course is an opportunity to understand the meaning not only of *what* you write, but also *how*. The meaning is sometimes political on a large scale, so we will also learn various methods of measuring styles.

PR: 3 credit hours in English at the 3000 level

Abbreviated Course Title: Style in Literature”

50.6 Marine Institute

Page 170, 2017-2018 Calendar, under the heading 10 Course Descriptions, amend the section as follows:

“**4106 Ship Operations Management** provides comprehensive knowledge of global ship management practices supporting the function of ship operations management, both ashore and at sea. This course

Marine Institute (cont'd)

aims to develop the students understanding of management issues in marine transportation as they relate to basic principles of management; management in multi-ethnic environments; managing under adverse conditions; the SOLAS Convention and the ISM and ISPS Codes; the International Labour Organization and the MLC Convention; the International Transport Federation; and, Port State Control.”

50.7 School of Pharmacy

Page 469, 2017-2018 Calendar, under the heading 3.3 Accreditation Status, amend the section as follows:

“3.3 Accreditation Status

~~The School of Pharmacy is accredited by the Canadian Council for Accreditation of Pharmacy Programs (CCAPP) to 2017.~~

The Bachelor of Science (Pharmacy) program of the School of Pharmacy at Memorial University has been awarded Full Accreditation Status by the Canadian Council for Accreditation of Pharmacy Programs for the period 2017-2021.

The Doctor of Pharmacy program of the School of Pharmacy at Memorial University has been awarded Provisional Accreditation by the Canadian Council for Accreditation of Pharmacy Programs for the period 2017-2021.”

Page 476, 2017-2018 Calendar, under the heading 12 Course Descriptions, amend the section as follows:

~~“**201W Structured Practice Experience I** is a structured practice experience in community pharmacy after completion of the first year which will provide an opportunity for students to apply their technical skills and introduce them to patient care activities. The structured practice experience is normally comprised of four weeks during May/June.~~

~~AR: attendance is required~~

~~CH: 0~~

~~LC: 0~~

~~PR: successful completion of all courses in Academic Terms 1 & 2 of the program~~

~~UL: applicable only to the Bachelor of Science (Pharmacy) program~~

2101 Pharmacy Practice I provides an introduction to the legal and professional framework of the practice of pharmacy. Pharmacy regulations in the dispensing of medications and provincial legislation that governs the practice of pharmacy will be the focus. Students will

School of Pharmacy (cont'd)

~~be introduced to core competencies of the profession including professionalism, interprofessionalism, pharmaceutical calculations, drug information and effective communication strategies for the provision of pharmacist care. Application of course content will occur in the concurrent course PHAR 2650.~~

~~CO: PHAR 2650~~

~~UL: applicable only to the Bachelor of Science (Pharmacy) program~~

2102 Pharmacy Practice II continues the introduction to the legal and professional framework of the practice of pharmacy. The course will focus on federal legislation that governs the practice of pharmacy, drug information, patient education and methods to deal with challenging patient behaviours. Students will be introduced to pharmaceutical care and begin to develop a pharmacist care plan. Students will participate in interprofessional education (IPE) modules with students from other health related programs when such modules are available. The passing grade in this course is 70%, failing which the student may be required to withdraw from the program.

CH: 2

CO: PHAR 2651

LC: 2

OR: tutorials 2 hours per week; attendance is required

~~UL: applicable only to the Bachelor of Science (Pharmacy) program~~

2201 Pharmaceutics I provides an insight into a number of physicochemical basics and explains them within a pharmaceutical context. The course provides the basic foundation necessary for the study of pharmaceutical dosage forms, pharmacokinetics and biopharmaceutics.

LH: 3; attendance is required

PR: Mathematics 1000 and 1001; and Chemistry 1050 and 1051, or Chemistry 1200 and 1001, or equivalent; and Science 1807

2202 Pharmaceutics II is designed to provide the student with an understanding of pharmaceutical dosage forms and their applications. It applies the principles taught in Pharmaceutics I to understand the design and components of the different pharmaceutical preparations.

LH: 3; attendance is required

PR: PHAR 2201 and Science 1807

~~**2203 Pharmaceutical Analysis** is designed to introduce some important techniques and methods of analysis in pharmaceutical sciences. The laboratory exercises consist of both non-instrumental and instrumental analytical techniques that are widely employed in the analysis of pharmaceuticals.~~

~~CH: 2~~

School of Pharmacy (cont'd)

~~LC: 2~~

~~LH: 3 hours every other week; attendance is required~~

~~PR: Chemistry 1050 and 1051 or Chemistry 1200 and 1001 or equivalent~~

~~UL: applicable only to the Bachelor of Science (Pharmacy) program~~

2250 Pharmacy Practice I is the first of a series of courses where students acquire and apply the knowledge, skills, and attitudes necessary for the practice of pharmacy. The course will include an introduction to calculations, technical skills and the legal and regulatory framework of the practice of pharmacy. The development of competence in the areas of patient care, drug information, communication, professionalism, critical thinking, and teamwork will begin. Application of knowledge and skills will occur in simulated pharmacy practice situations.

AR: attendance is required in practice sessions

CH: 5

CO: all Academic Term 1 Pharmacy courses, with the exception of PHAR 2010

OR: practice sessions 2 hours per week

2251 Pharmacy Practice II continues the acquisition, development, and application of the knowledge, skills, and attitudes necessary for the practice of pharmacy. The legal and professional framework of the practice of pharmacy, patient counselling, and technical skills will be emphasized. Development of competence in the areas of patient care, drug information, communication, professionalism, critical thinking, and teamwork will occur. Application of knowledge and skills will take place in real and simulated pharmacy practice situations.

AR: attendance is required in practice sessions

CH: 5

CO: all Academic Term 2 Pharmacy courses, with the exception of PHAR 2010

LC: 2

OR: practice sessions 3 hours per week

PR: PHAR 2250

2610 Health Systems provides an introduction to the Canadian healthcare system, its development, history, structure, and financing. The federal and provincial governments' involvement in the healthcare system and health policy will be presented. The roles and responsibilities of the pharmacist within healthcare will also be examined.

2620 Social and Ethical Behaviour introduces the social and cultural factors and determinants that influence health in Canada, and their

School of Pharmacy (cont'd)

ethical implications. Theoretical approaches from a social perspective, including value systems in Canada, ethical dilemmas and the role of ethics in pharmacy practice will be discussed.

CH: 2

LC: 2

PR: PHAR 2610

~~**2650 Pharmacy Skills** provides an introduction to the skills necessary for pharmacy practice in order to meet the educational outcomes for the first year of the pharmacy program. This course is the first in a series of Pharmacy Skills courses, all of which require students to acquire and apply the knowledge, attitudes and skills necessary for the effective practice of the profession. Students will begin to develop abilities in communication, professionalism, critical thinking, problem-solving, teamwork and self-directed learning. Students will apply basic knowledge and skills in drug information, technology, interpersonal communications and pharmacy legislation to simulated practice situations. Students will develop public communication skills through the completion of a professional communications program. Activities in this course will complement material covered in the concurrent course PHAR 2101.~~

~~CO: all Academic Term 1 Pharmacy courses~~

~~CR: the former PHAR 2150~~

~~LC: 0~~

~~OR: practical sessions 3 hours per week; tutorials 1 hour per week; attendance is required~~

~~UL: applicable only to the Bachelor of Science (Pharmacy) program~~

~~**2651 Pharmacy Skills** provides an introduction to the skills necessary for pharmacy practice in order to meet the education outcomes for the first year of the pharmacy program. Students will continue to develop abilities in communication, professionalism, critical thinking, problem-solving, teamwork and self-directed learning. Pharmacy practice in the community pharmacy setting will be a focus. Students will develop dispensing, drug information and pharmaceutical calculations skills relevant to community pharmacy practice. Students will begin developing their patient interaction and patient education skills. Activities in this course will complement material covered in the concurrent PHAR 2102. Students will participate in interprofessional education (IPE) modules with students from other health related programs when such modules are available.~~

~~CO: all Academic Term 2 Pharmacy courses~~

~~CR: the former PHAR 2151~~

~~LC: 0~~

~~OR: practical sessions 3 hours per week; tutorials 1 hour per week; attendance is required~~

School of Pharmacy (cont'd)

PR: PHAR 2101 and 2650

~~UL: applicable only to the Bachelor of Science (Pharmacy) program~~

Page 476, 2017-2018 Calendar, under the heading 12 Course Descriptions, amend the section as follows:

“2003 Anatomy and Physiology II provides an overview of human anatomy and physiology throughout the lifespan. It includes aspects of cytology and histology that form a foundation for the practice of pharmacy. The focus will be on developing an understanding of the interrelationships and integration of all systems from cell to whole organism. Special emphasis is given to the ~~endocrine~~, circulatory, respiratory, urinary, digestive, and reproductive systems.

CR: Nursing 1012

LH: 2; attendance is required

PR: PHAR 2002 and Science 1807”

50.8 Department of Biochemistry

Page 496, 2017-2018 Calendar, under the heading 6.1.4 Biochemistry and Chemistry Joint Honours, amend the section as follows:

“6.1.4 Biochemistry and Chemistry Joint Honours

The following courses are required:

1. Chemistry 1050 and 1051 (~~or Chemistry 1010, 1011 and the former 1031~~) (or Chemistry 1200 and 1001), Mathematics 1000 and 1001, Physics 1050 (or 1020) and 1051 (or 1021), 6 credit hours in first year English courses. Biology 1001 and 1002 are highly recommended;
2. Mathematics 2000;
3. Chemistry 2100, 2210, 2301, 2302, 2400, 2401, 3110, 3211, 3410;
4. Nine further credit hours in Chemistry courses numbered 3000 or higher, at least 6 credit hours of which must be in courses numbered 4000 or higher;
5. Biochemistry 2100, 2101, 3105, 3106, and either 3107, 3108, or Medicine 310A/B;
6. 12 credit hours chosen from Biochemistry 4002, 4101, 4102, 4103, 4104, 4105, 4200, 4201, ~~4210, or 4211,~~ 4210 or 4211, 4230-4249, 4230, 4231-4239, 4240, 4241-4249;
7. Either Chemistry 490A/B or Biochemistry 499A/B; and
8. A sufficient number of elective courses to bring the degree to a total of 120 credit hours.

Department of Biochemistry (cont'd)

Note: Students should check prerequisites for 4000 level courses before making decisions about their 3000 level courses and seek academic advice if necessary.

Page 507, 2017-2018 Calendar, under the heading 10.1 Biochemistry, amend the section as follows:

“10.1 Biochemistry

www.mun.ca/biochem

The following undergraduate programs are available in the Department:

1. Biochemistry and Cell Biology/Microbiology Joint Honours
2. Biochemistry and Chemistry Joint Honours
3. Biochemistry and Physics Joint Honours
4. Biochemistry and Psychology (Behavioural Neuroscience) Joint Honours
5. Biochemistry (Nutrition) and Psychology (Behavioural Neuroscience) Joint Honours
6. Major or Honours in Biochemistry
7. Major or Honours in Nutrition
8. Minor in Biochemistry

Students who wish to enrol in any of these programs should plan their program well in advance so that they will have taken the appropriate prerequisites. Entry to a number of required courses is limited and will be determined by academic performance. Required courses should be taken in the year indicated by the course numbers so as to avoid timetable clashes and missing prerequisites which could prolong the time necessary to complete the program. Students are advised to consult with the Department at the earliest opportunity.

Candidates for the general and honours degrees in the programs above should refer to the Faculty of Science **Degree Regulations** for the **General** and **Honours** degrees of Bachelor of Science.

Candidates for a minor in Biochemistry should refer to the **Regulations for the General Degree of Bachelor of Science**, Clause 7.

Department of Biochemistry (cont'd)

Students who intend to pursue graduate studies should take the courses leading to the honours degree.

Biochemistry course descriptions are found at the end of the Faculty of Science section under **Course Descriptions, Biochemistry**.

Students are encouraged to choose a minor.

For the purposes of a Major, Honours, or Minor degree in Biochemistry, Medicine 310A/B and Chemistry 2400, 2401 count as Biochemistry courses. For the purposes of a Major or Honours degree in Biochemistry(Nutrition), Medicine 310A/B count as Biochemistry courses.

Note: ~~Supplementary examinations will be allowed in certain Biochemistry courses which have written final examinations. Students should refer to the Faculty of Science Degree Regulations for details.~~

Supplementary examinations will be allowed in certain Biochemistry courses which have written final examinations. Students should refer to the Faculty of Science Degree Regulations for details.

10.1.1 Admission to Programs

Students who wish to declare a Major in Biochemistry or Biochemistry (Nutrition) or who wish to apply for Honours standing in any of our programs are strongly recommended to do so by May 31 in any year. Failure to apply by the recommended date may result in your application not being processed before your registration time. In addition, students who do not declare by this date ~~may~~ **might** not be considered for departmental scholarships or other awards.

10.1.1.1 Admission to the Major in Biochemistry

Entry to the Major in Biochemistry program is based on academic standing.

1. To be considered for admission to the program students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%.
 - a. English 1090 or the former 1080 (or 1000), 1110 (or equivalent)
 - b. Chemistry 1050, 1051
 - c. Mathematics 1000, 1001 (or Mathematics 1090, 1000, or Mathematics 109 A/B, 1000)
 - d. Physics 1050 (or 1020), 1051 (or 1021), or Biology 1001, 1002

Department of Biochemistry (cont'd)

Notes:

1. *Students are required to complete at least 78 credit hours in Science courses for the General Degree.*
2. *Students taking Mathematics 1000 should take Physics 1050 as their first Physics course.*
3. *It Is recommended that students who wish to pursue future studies in biophysics or related fields or who are considering postgraduate health professional programs take Physics 1050 as their first Physics course.*
4. ~~*For the purposes of a Biochemistry degree, Medicine 310A/B count as Biochemistry courses.*~~

10.1.1.2 Admission to the Honours Degree in Biochemistry

~~Students normally should apply for an Honours program at the completion of their third year of studies. Honours students would normally follow the Biochemistry Majors program before applying to honours, and must meet its admissions requirements as follows: To be considered for admission to the majors program prior to admission to honours, students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%. In addition, students must be eligible for entry to Chemistry 2400.~~

~~English 1090 or the former 1080, 1110 (or equivalent)~~

~~Chemistry 1050 and 1051 (or 1200 and 1001)~~

~~Mathematics 1000, 1001 (or Mathematics 1090, 1000, or Mathematics 109A/B, 1000)~~

~~Physics 1050 (or 1020), 1051 (or 1021), or Biology 1001, 1002~~

To be eligible for admission, students must be in Honours standing **as per 7.5.6.1** of the **Regulations for the Honours Degree of Bachelor of Science**. To be considered for early admission to an Honours program in Biochemistry at the end of second year, students must have achieved at least 70% in each of Biochemistry 2100 and 2101 and Chemistry 2400, 2401.

10.1.1.3 Admission to the Major in Nutrition

Entry to the Major in Nutrition program is based on academic standing.

1. To be considered for admission to the program students must have at least 30 credit hours in courses and have successfully completed the

Department of Biochemistry (cont'd)

following courses (or their equivalents) with a minimum overall average of 60%.

- a. English 1090 or the former 1080 (or 1000), 1110 (or equivalent)
- b. Chemistry 1050, 1051 (or Chemistry 1010, 1011 or 1200, 1001) (or Chemistry 1010,1050 or Chemistry 1200,1001)
- c. Mathematics 1090, 1000 (or Mathematics 109A/B, or Mathematics 1000 and one elective)
- d. Biology 1001, 1002 or Physics 1020, 1021 (or 1050,1051) (or equivalent)

10.1.1.4 Admission to the Honours Degree in Biochemistry (Nutrition)

Students normally should apply for an Honours program at the completion of their third year of studies. ~~Honours students would normally follow the Biochemistry (Nutrition) Majors program before applying to honours, and must meet its admissions requirements as follows:~~

- ~~1. To be considered for admission to the majors program prior to admission to honours, students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%:~~
 - ~~a. English 1090 or the former 1080, 1110 (or equivalent)~~
 - ~~b. Chemistry 1050, 1051 (or Chemistry 1010, 1011, or 1200, 1001)~~
 - ~~c. Mathematics 1090, 1000 (or Mathematics 109A/B, 1000 or Mathematics 1000 and one elective)~~
 - ~~d. Biology 1001, 1002 or Physics 1020, 1021 (or equivalent)~~

To be eligible for admission to the honours program, students must be in Honours standing as per 7.5.6.1 of the **Regulations for the Honours Degree of Bachelor of Science**. To be considered for early admission to an Honours program in Nutrition at the end of second year, students must have achieved at least 70% in each of their required 2000 level Biochemistry and Chemistry courses.

10.1.2 10.1.2.1 Major in Biochemistry

~~Entry to the Biochemistry Majors program is based on academic standing.~~

Department of Biochemistry (cont'd)

- ~~1. To be considered for admission to the program students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%. In addition, students must be eligible for entry to Chemistry 2400.~~
- ~~a. English 1090 or the former 1080, 1110 (or equivalent) —~~
 - ~~b. Chemistry 1050 and 1051 (or 1200 and 1001) —~~
 - ~~c. Mathematics 1000, 1001 (or Mathematics 1090, 1000, or Mathematics 109A/B, 1000) —~~
 - ~~d. Physics 1050 (or 1020), 1051 (or 1021), or Biology 1001, 1002~~

Required courses to complete the major:

- a. English 1090 or the former 1080 (or 1000), 1110 (or equivalent); Biology 1001 and 1002; Mathematics 1000, 1001; Physics 1050 (or 1020), 1051 (or 1021); Chemistry 1050, Chemistry 1051 (or Chemistry 1200,1001).
- b. Biochemistry 2100, 2101, 3105, 3106, 3107, 3108.
- c. At least 12 credit hours in courses from Biochemistry 2600, 3203, 4002, 4101, 4103, 4104, 4105, 4200, 4201, 4230, 4231-4239, 4230-4239
- d. ~~Medicine 310A/B or 6 credit hours from Biochemistry 4240-4249, Biology 2060, 3050, 3401, 3402, 3530, 4200, 4245, 4404, Chemistry 4201, 4701.~~ Six additional credit hours chosen from: Medicine 310A/B, Biochemistry 2600, Biology 2060, 3050, Chemistry 4201, 4701 or Biochemistry courses at the 3000 or 4000 level.
- e. Chemistry 2301 or Physics 2053; Chemistry 2400, 2401.
- f. One of Chemistry 2100, Environmental Sciences 3210.
- g. A sufficient number of elective courses to bring the total Science courses up to at least 78 credit hours and the degree total up to 120 credit hours.

Notes: 1. Students are required to complete at least 78 credit hours in Science courses for the General Degree. —

—— 2. Students taking Mathematics 1000 should take Physics 1050 as their first Physics course.

—— 3. — It is recommended that students who wish to pursue future studies in biophysics or related fields or who are considering

Department of Biochemistry (cont'd)

~~postgraduate health professional programs take Physics 1050 as their first Physics course.—~~

~~4. For the purposes of a Biochemistry degree, Medicine 310A/B count as Biochemistry courses.~~

~~2. Students are encouraged to choose a minor.~~

~~10.1.2.1~~ **10.1.2.2 Honours Degree in Biochemistry**

~~Students normally should apply for an Honours program at the completion of their third year of studies. Honours students would normally follow the Biochemistry Majors program before applying to honours, and must meet its admissions requirements as follows:~~

~~1. To be considered for admission to the majors program prior to admission to honours, students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%. In addition, students must be eligible for entry to Chemistry 2400:~~

~~a. English 1090 or the former 1080, 1110 (or equivalent) —~~

~~b. Chemistry 1050 and 1051 (or 1200 and 1001) —~~

~~c. Mathematics 1000, 1001 (or Mathematics 1090, 1000, or Mathematics 109A/B, 1000) —~~

~~d. Physics 1050 (or 1020), 1051 (or 1021), or Biology 1001, 1002~~

~~2. To be eligible for admission, students must be in Honours standing. To be considered for early admission to an Honours program in Biochemistry at the end of second year, students must have achieved at least 70% in each of Biochemistry 2100 and 2101 and Chemistry 2400, 2401.—~~

1. Required courses:

a. English 1090 or the former 1080 (**or 1000**), 1110 (or equivalent); Biology 1001 and 1002; Mathematics 1001; Physics 1050 (or 1020), 1051 (or 1021); Chemistry 1050, Chemistry 1051 (**or Chemistry 1200,1001**).

b. Biochemistry 2100, 2101, 3105, 3106, 3107, 3108, 4102, 499A, 499B, Medicine 310A/B **and either Biochemistry 4210 or 4211.**

~~c. Biochemistry 4210 or 4211.—~~

c. Twelve credit hours in courses from Biochemistry 4002, 4101, 4103, 4104, 4105, 4200, 4201, **4230, 4231-4239**, ~~4230-4239.~~

Department of Biochemistry (cont'd)

- ~~d. At least 6 credit hours in courses from Biochemistry 2600, 3203, 4240-4249, Biology 2060, 3050, 3530, 4200, 4245, 4404, Chemistry 4201, 4701. At least 6 credit hours chosen from Biochemistry 2600, Biology 3050, Chemistry 4201, 4701, or Biochemistry courses at the 3000 or 4000 level.~~
- ~~f. Biology 1001 and 1002; Mathematics 1001; and Physics 1050 (or 1020), 1051 (or 1021), for those students who did not complete them in first year. (See Notes 1. and 2. below).~~
- ~~g. Chemistry 1051 is a required course for the major in Biochemistry and must normally be completed prior to entrance into 2nd year Chemistry and Biochemistry courses. Students who do not meet the requirements for entry into Chemistry 1050 from high school can take Chemistry 1010 followed by Chemistry 1050 and 1051. It is strongly recommended that these students complete Chemistry 1051 prior to second year.~~
- e. Chemistry 2301 or Physics 2053, Chemistry 2400, 2401, one of ~~Chemistry 3410 or 3411~~ Chemistry 3411 or 4410.
- f. One of Chemistry 2100, Environmental Sciences 3210.
- g. Statistics 2550 or equivalent
- h. A sufficient number of elective courses to bring the total for the degree up to 120 credit hours.

Notes: 1. Students taking Mathematics 1000 should take Physics 1050 as their first Physics course.—

—2. It is recommended that students who wish to pursue future studies in biophysics or related fields or who are considering postgraduate health professional programs take Physics 1050 as their first Physics course.—

—3. For the purposes of a Honours Degree in Biochemistry, Medicine 310A/B count as Biochemistry courses.—

—4. Students are encouraged to choose a minor.—

- 2. Those courses in which a grade "B" or an average of 75% or higher are required, as specified under **7.5.6.1** of the **Regulations for the Honours Degree of Bachelor of Science**, are those listed in clauses 1 (b), (c), and (d) above and Chemistry 2400 and 2401.

~~10.1.2.2~~ 10.1.2.3 **Minor in Biochemistry**

Students who take a minor in Biochemistry will complete:

Department of Biochemistry (cont'd)

1. Biochemistry 2101, 3106
2. One of Biochemistry 2100, 2600, Biology 2250.
3. Nine credit hours in Biochemistry at the ~~third or fourth~~ 3000 or 4000 ~~year~~ level; or 6 credit hours in Biochemistry at the 3000 or 4000 ~~year level~~ ~~third or fourth year level~~ and Biology 3050.
4. ~~Either Chemistry 2400, 2401 or Chemistry 2440 and 3 additional credit hours from the Biochemistry courses listed in 3. above.~~ Either Chemistry 2400 and 2401 OR Chemistry 2400 and one additional Biochemistry course at the 3000 or 4000 level.

Course prerequisites stipulated in the course descriptions shall apply to a minor in Biochemistry.

Note: For the purposes of a Biochemistry minor, Medicine 310A/B count as Biochemistry courses.

10.1.3 Nutrition Program

~~10.1.3.1~~ 10.1.2.4 Major in Nutrition

~~Entry to the Nutrition majors program is based on academic standing.~~

~~1. To be considered for admission to the program students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%.~~

- ~~a. English 1090 or the former 1080, 1110 (or equivalent) —~~
- ~~b. Chemistry 1050, 1051 (or Chemistry 1010, 1011 or 1200, 1001) —~~
- ~~c. Mathematics 1090, 1000 (or Mathematics 109A/B, 1000 or Mathematics 1000 and one elective) —~~
- ~~d. Biology 1001, 1002 or Physics 1020, 1021 (or equivalent) —~~
 1. Required courses to complete the major:
 - a. English 1090 or the former 1080 (or 1000) and 1110 (or equivalent); Biology 1001 and 1002; Mathematics 1000; Physics 1020 and 1021 (or Physics 1050 and 1051); Chemistry 1050 and Chemistry 1051 (or Chemistry 1200 and 1001).
 - b. Biochemistry 2005, 2100, 2101, 2600, 3106, 3203, 3402, 4300, 4301, Medicine 310A/B

Department of Biochemistry (cont'd)

- c. Six credit hours in courses from Biochemistry 3052, 3107, 3108, 3202, 3600, 4002, 4101, 4103, 4104, 4105, 4200, 4201, 4230, 4231-4239, 4240, 4241-4249, ~~4230-4249~~, Biology 3050.
- d. ~~Biology 1001 and 1002; and Physics 1020 and 1021 (or equivalent), for those students who did not complete them in first year—~~
 - d. ~~Chemistry 2440 (or Chemistry 2400, 2401)~~ Chemistry 2400
 - e. ~~Statistics 2550 or equivalent~~
 - f. A sufficient number of elective courses to bring the total Science courses up to at least 78 credit hours and the total for the degree up 120 credit hours.

~~Students are encouraged to choose a minor.~~

~~Notes: 1. Students are required to complete at least 78 credit hours in Science courses for the General Degree.~~

~~2. Students who choose to complete Chemistry 2400/2401 are advised to take the appropriate prerequisites for those courses. 3. For the purposes of a Biochemistry (Nutrition) degree, Medicine 310A/B count as Biochemistry courses.~~

10.1.3.2 10.1.2.5 Honours Degree in Nutrition

~~Students normally should apply for an Honours program at the completion of their third year of studies. Honours students would normally follow the Biochemistry (Nutrition) Majors program before applying to honours, and must meet its admissions requirements as follows:~~

- ~~1. To be considered for admission to the majors program prior to admission to honours, students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%:~~
 - ~~a. English 1090 or the former 1080, 1110 (or equivalent)—~~
 - ~~b. Chemistry 1050, 1051 (or Chemistry 1010, 1011, or 1200, 1001)—~~
 - ~~c. Mathematics 1090, 1000 (or Mathematics 109A/B, 1000 or Mathematics 1000 and one elective)—~~
 - ~~d. Biology 1001, 1002 or Physics 1020, 1021 (or equivalent)—~~

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~~2. To be eligible for admission to the honours program, students must be in Honours standing. To be considered for early admission to an Honours program in Nutrition at the end of second year, students must have achieved at least 70% in each of their required 2000 level Biochemistry and Chemistry courses. —~~

1. Required courses:

- a. English 1090 or the former 1080 (or 1000), 1110 (~~or equivalent~~); Biology 1001 and 1002; Mathematics 1000; Physics 1020 (or 1050) and 1021 (or 1051) (~~or equivalent~~); Chemistry 1050, 1051 (or Chemistry 1200,1001).
- b. Biochemistry 2005, 2100, 2101, 2600, 3106, 3107, 3203, 3402, 3600, 4002, 4300, 4301, 4502, 499A, 499B, Medicine 310A/B.
- c. Twelve additional credit hours chosen from Biochemistry 3052, 3105, 3108, 3202, 4101, 4103, 4104, 4105, 4200, 4201, 4210, 4211, 4230, 4231-4239, 4240, 4241-4249, ~~4230-4249~~, Biology 3050, Chemistry 4701.
- d. ~~Biology 1001 and 1002; and Physics 1020 and 1021 (or equivalent), for those students who did not complete them in first year. —~~
- e. ~~Chemistry 2440 (or Chemistry 2400, 2401).~~ Chemistry 2400
- f. Statistics 2550 ~~or equivalent~~.
- i. A sufficient number of elective courses to bring the total for the degree up to 120 credit hours.

~~2. Students are encouraged to choose a minor. —~~

3. Those courses in which the grades specified under **7.5.6.1** of the **Regulations for the Honours Degree of Bachelor of Science** are 60 credit hours chosen from Biochemistry courses, Med 310A/B, and Biology 3050.

Notes: ~~1. Students who choose to complete Chemistry 2400/2401 are advised to take the appropriate prerequisites for those courses. —~~
~~2. For the purposes of a Biochemistry (Nutrition) Honours degree, Medicine 310A/B count as Biochemistry courses.”~~

Page 538, 2017-2018 Calendar, under the heading 11.1 Biochemistry, amend the section as follows:

Department of Biochemistry (cont'd)

“2005 Food, Food Safety, and Health introduces the concepts of the composition of foods, and how the processing of food affects sensory appeal, shelf life and nutrient composition. Common food and water-borne illnesses (risks and prevention) are covered in the course content. Students will also be introduced to food biotechnologies, including genetically modified organisms, ~~nutriceuticals~~ nutraceuticals and the development of functional foods.
~~CO: Chemistry 2400 or 2440~~

2100 Introduction to Molecular Biology and Genetics (same as Biology 2250) will cover the heritability of simple traits from phenotype to genotype; the discovery of DNA as the molecule of heredity; the structure and function of DNA; ~~the elucidation of the genetic code; and~~ the manipulation of DNA for recombinant DNA technology and biotechnology; and briefly, pharmacogenetics.

~~CO: BIOC 2101, Chemistry 2401, Physics 1021 or 1051. Students may replace the co-requisite Chemistry 2401 with Chemistry 2440 as a prerequisite. Chemistry 2440 may not be taken as a co-requisite of 2100~~
Chemistry 2400

CR: Biology 2250

LH: up to four hours on alternate weeks which will normally consist of one three hour laboratory period plus one additional hour on the following day

~~PR: BIOC 2101, Chemistry 2401, Physics 1021 or 1051, and Science 1807. Students may replace the co-requisite Chemistry 2401 with Chemistry 2440 as a prerequisite. Chemistry 2440 may not be taken as a co-requisite of 2100.~~

UL: Biology students should normally take Biology 2250 in the Fall semester, and Biochemistry and Biochemistry (Nutrition) students should normally take BIOC 2100 in Winter semester

2101 Introduction to Biochemistry is an introduction to the major organic substances of living organisms, proteins, carbohydrates and lipids: their structure, analysis and biochemical function. Other topics will include: enzymes; the biochemistry of membranes, including the plasma membrane and specialized intracellular membranes; and the biochemistry of selected differentiated cells.

CR: Pharmacy 2004, or the former Pharmacy 3110

LH: one three-hour laboratory period on alternate weeks

PR: Chemistry 2400 ~~and 2401, or Chemistry 2440~~; and Physics 1020 or 1050, and 1021 (or 1051); and Science 1807. ~~Chemistry 2401 and Physics 1021 or 1051 can be done concurrently.~~

Department of Biochemistry (cont'd)

3402 Food Chemistry examines the following topics: water structure and the role of water in chemical reactions and mechanical properties of foods; chemistry and physical properties of carbohydrates, proteins and lipids; food dispersions; pigments and natural colorants; food flavour; enzyme properties and applications; vitamins and minerals; chemistry of enzymic and non- enzymic browning; characteristics of: muscle tissue, milk, eggs, bread and edible plant tissue; food additives; and, chemical changes in foods during processing.

LH: one period per week

PR: BIOC 2005; BIOC 2101; ~~Chemistry 2440~~ or Chemistry 2400-2401, and Science 1807

4211 Biochemical Research Techniques II ~~is designed to familiarize students with methods used for the study of cellular and subcellular metabolism. This course may include a research project.~~ introduces students to the primary literature of metabolism. It teaches them to critique, both orally and in writing, current research papers. By means of guest lecturers and field trips it introduces students to biochemical activities outside of the home department.

AR: attendance is required

LC: ~~times as arranged~~

LH: ~~times as arranged~~

PR: BIOC 3106”

Page 540, 2017-2018 Calendar, under the heading 11.2 Biology, amend the section as follows:

~~“2250 Principles of Genetics is an introduction to Mendelian and molecular genetics. Phenotype and genotype, behaviour of alleles in genetic crosses, chromosome theory of inheritance, genetic linkage, molecular biology of DNA, RNA and protein, molecular basis of mutation, recombinant DNA, applications of genetic biotechnology. CO: Chemistry 2440 or 2400 CR: Biochemistry 2100 the former BIOL 3250~~

~~LH: 3~~

~~PR: Science 1807; BIOL 1001 and 1002; Chemistry 1010 and 1011 (or 1050/1051)~~

~~PR: Chemistry 2440 or 2400~~

(same as Biochemistry 2100) will cover the heritability of simple traits from phenotype to genotype; the discovery of DNA as the molecule of heredity; the structure and function of DNA; the manipulation of DNA for recombinant DNA technology and biotechnology; and briefly, pharmacogenetics.

CO: Chemistry 2400

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CR: Biochemistry 2100

LH: up to four hours on alternate weeks which will normally consist of one three hour laboratory period plus one additional hour on the following day

PR: Science 1807

UL: Biology students should normally take BIOL 2250 in the Fall semester, and Biochemistry and Biochemistry (Nutrition) students should normally take Biology 2100 in Winter semester.”

Page 476, 2017-2018 Calendar, under the heading 12 Course Descriptions, amend the section as follows:

“**2004 Introduction to Biochemistry** is an introduction to the major organic substances of living organisms, proteins, carbohydrates and lipids: their structure, analysis and biochemical function. Other topics include: enzymes; the biochemistry of membranes, including the plasma membrane and specialized intracellular membranes; and the biochemistry of selected differentiated cells.

CR: Biochemistry 2101

OR: tutorials as required

PR: Chemistry 2400 ~~and 2401 or Chemistry 2440~~, and Physics 1020 (or 1050), and 1021 (or 1051)”

50.9 Department of Physics and Physical Oceanography

Page 527, 2017-2018 Calendar, under the heading 10.10.1 Minor in Physics, amend the section as follows:

“9.10.1 Minor in Physics

For ~~Electrical—~~Computer Engineering students and Electrical Engineering students, 24 credit hours in Physics which must include Physics 1050 (or 1020), 1051, 2750, and 3000, ~~and 3550~~ with an additional ~~9~~ 12 credit hours selected from Physics 2820, 3600, 3750, 3751, 3800, 4000, 4220, 4600 or other 3000 or 4000 level courses subject to approval by the Head of the Department of Physics and Physical Oceanography and the ~~Chair~~ Head of the Department of Electrical and Computer Engineering.”

Page 528, 2017-2018 Calendar, under the heading 10.10.4 Major in Environmental Physics, amend the section as follows:

“9.10.4 Major in Environmental Physics

1. English 1090 (or the former 1080) and English 1110 (or equivalent)
2. Chemistry 1050 and 1051 (or Chemistry 1010, 1011, and 1031)

Department of Physics and Physical Oceanography (cont'd)

3. Mathematics 1000 and 1001
4. Mathematics 2000, ~~Mathematics~~ 2050, ~~Mathematics~~-2260, ~~Mathematics~~-3202
5. Physics 1050 (or 1020) and 1051
6. Physics 2053, 2055, 2300, ~~2750~~, 2820, 3220, 3300, 3340, 3820 (or Earth Sciences 3179), ~~3900~~, ~~4340~~
7. ~~Physics 3400 or 3500~~
8. ~~7.~~ Earth Sciences 1000, 1002, 2502, ~~3170~~, ~~3172~~ 3600
9. ~~8.~~ Geography 2102, 2195, 3120
10. ~~9~~ Biology 2120, 2600
10. Plus 30 additional credit hours from elective courses for a total of 120 credit hours.

The Major degree offers students a fair degree of latitude in choosing electives. Students are encouraged to take Physics 2750 as well as electives from Geography and Earth Sciences: of particular merit would be any of Earth Sciences ~~3600~~, 3611, 3170, 3172 or 4105.”

Page 528, 2017-2018 Calendar, under the heading 10.10.5 Honours in Environmental Physics, amend the section as follows:

“9.10.5 Honours in Environmental Physics

1. English 1090 (or the former 1080) and English 1110 (or equivalent)
2. Chemistry 1050 and 1051 (or Chemistry 1010, 1011, and 1031)
3. Mathematics 1000 and 1001
4. Mathematics 2000, ~~Mathematics~~ 2050, ~~Mathematics~~ 2260, ~~Mathematics~~-3202
5. Physics 1050 (or 1020) and 1051
6. Physics 2053, 2055, 2300, ~~2750~~, 2820, 3220, 3300, 3340, 3820 (or Earth Sciences 3179), 3900, 4205, 4300, 4340, ~~4820~~, 490A/B.
7. ~~Physics 3400 or 3500~~
8. ~~7.~~ Earth Sciences 1000, 1002, 2502, ~~3170~~ and ~~3172~~ 3600
9. ~~8.~~ Geography 2102, 2195, 3120
10. ~~9.~~ Biology 2120, 2600
10. Plus 15 additional credit hours from elective courses for a total of 120 credit hours.

Students are encouraged to take Physics 2750 as well as electives from Geography and Earth Sciences: of particular merit would be any of Earth Sciences 3611, 3170, 3172 or 4105.

~~An honours thesis is to be presented on work undertaken by the candidate under the guidance of a Department of Physics and Physical Oceanography faculty member. The thesis comprises the 6 credit hour course Physics 490A/B. Students should seek departmental advice~~

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regarding a thesis project no later than the winter preceding the semester in which the project will be started.

The Department recommends that students wishing to complete the Honours Environmental Physics program in 120 credit hours follow the schedule given below. This schedule is intended for students who qualify for Physics 1050 and 1051. Other suggested course schedules are available from the Head of the Department.

Those courses in which a grade of "B" or better or an average of 75% or higher are required, as specified under **Academic Standing, clause 1** of the **Regulations for the Honours Degree of Bachelor of Science**, are 45 credit hours in Physics courses, and 15 credit hours in other courses (beyond the 1000 level) selected from the specified program courses in Earth Sciences, Geography and Biology.

Recommended Course Schedule – Honours Environmental Physics Program

Year	Semester I	Semester II
I	<ul style="list-style-type: none"> • Chemistry 1050 • Earth Sciences 1000 • English 1080 • Mathematics 1000 • Physics 1050 	<ul style="list-style-type: none"> • Chemistry 1051 • Earth Sciences 1002 • English 1110 • Mathematics 1001 • Physics 1051
II	<ul style="list-style-type: none"> • Geography 2102 • Mathematics 2000 • Mathematics 2050 • Physics 2053 • Physics 2820 	<ul style="list-style-type: none"> • Geography 2195 • Mathematics 2260 • Mathematics 3202 • Physics 2750 • Elective
III	<ul style="list-style-type: none"> • Earth Sciences 2502 • Physics 3220 • Physics 3820 • Physics 3400/3500 • Physics 3340 	<ul style="list-style-type: none"> • Biology 2120 • Earth Sciences 3170 • Geography 3120 • Physics 2055 • Physics 4820
IV	<ul style="list-style-type: none"> • Biology 2600 • Earth Sciences 3172 • Physics 3300 • Physics 490A • Elective 	<ul style="list-style-type: none"> • Physics 4205 • Physics 4300 • Physics 4340 • Physics 490B • Elective

Page 380, 2017-2018 Calendar, under the heading 14.11 Geography, amend the section as follows:

“2102 Physical Geography: The Global Perspective is a study of form, process, and change in natural systems at and near the surface of Earth, viewed as human environment. Emphasis is on global and regional

Department of Physics and Physical Oceanography (cont'd)

scales in the systematic study of climate, water, landforms and vegetation. All sections of this course follow Quantitative Reasoning Course Guidelines available at www.mun.ca/hss/qr.

~~CR: the former GEOG 2100, the former GEOG 2101~~

LH: 3

PR: GEOG 1050, or the former GEOG 1001, or the former GEOG 1011, or students following a major in Environmental Physics”

Page 540, 2017-2018 Calendar, under the heading 11.2 Biology, amend the section as follows:

“2600 Principles of Ecology is a conceptual course introducing the principles of ecology, including theoretical, functional and empirical approaches.

CR: the former BIOL 3600

LH: 3

PR: Science 1807; BIOL 1001 and 1002, or BIOL 2120 and admission to a major in Environmental Physics”

50.10 Department of Chemistry

Page 544, 2017-2018 Calendar, under the heading 11.3 Chemistry, amend the section as follows:

“3211 Inorganic Chemistry is a detailed examination of the structure, bonding, and chemistry of the d block elements.

AR: attendance is required in the laboratory component of this course. Failure to attend may result in a failing grade or deregistration from the course.

LH: 3

PR: Science 1807; CHEM 2210; CHEM 2301 or 2302; CHEM 2401; or permission of the instructor”

50.11 Faculty of Education

Page 114, 2017-2018 Calendar, under the heading 9.3 Bachelor of Education (Post-Secondary) as a First Degree, amend the section as follows:

“9.3 Bachelor of Education (Post-Secondary) as a First Degree

- The full or part-time Bachelor of Education (Post-Secondary) as a First Degree is the equivalent of a 120 credit hour program.
- The requirements for the Bachelor of Education (Post-Secondary) as a First Degree are listed in **Table 5 Bachelor of Education (Post-Secondary) as a First Degree**.

Faculty of Education (cont'd)

Table 5 Bachelor of Education (Post-Secondary) as a First Degree

Required Courses	Elective Courses
<p>6 credit hours in English</p> <p>30 credit hours that satisfy the requirements for the Diploma in Adult Learning and Post-Secondary Education as follows: ED 2700, 2710, 2720, 2730, 2740 2801, 3280, 4735 and 12 credit hours chosen from ED 2800, 2803, 2806, 3730, 3801, 4730 with no more than 6 credit hours at the 2000 level</p> <p>30 credit hours in recognition of prior learning. Students who are not eligible for the maximum of 30 credit hours upon admission will be required to obtain further work experience and/or complete additional university courses.</p> <p>30 non-Education credit hours to complement and strengthen an area of teaching specialization or to provide development in an area within the field of post-secondary education.</p>	<p>12 additional credit hours chosen from ED 2720, 2740, 2801, 2900, 3210, 3440, 3710, 3720, 3730, 3801, 4450, 4700, 4710, 4730, 4760-4780</p> <p>12 additional credit hours in non-Education electives</p>

Page 114, 2017-2018 Calendar, under the heading 9.4 Bachelor of Education (Post-Secondary) as a Second Degree, amend the section as follows:

“9.4 Bachelor of Education (Post-Secondary) as a Second Degree

- The Bachelor of Education (Post-Secondary) as a Second Degree is a full or part-time, 36 credit hour program intended for students who have completed an appropriate Bachelor’s degree.
- The 36 credit hours are set out in **Table 6 Bachelor of Education (Post-Secondary) as a Second Degree**.
- A student can be awarded only one of the **Diploma in Adult Learning and Post-Secondary Education**, the former Diploma in Adult Teacher Education, the former Diploma in Post-Secondary Education or the **Bachelor of Education (Post-Secondary) as a Second Degree**.
- A student must also comply with **UNIVERSITY REGULATIONS - General Academic Regulations (Undergraduate) - Second Degree**.

Faculty of Education (cont'd)

Table 6 Bachelor of Education (Post-Secondary) as a Second Degree

Required Courses in Education	Elective Courses in Education
ED 2700, 2710, 2720 , 2730, <u>2740</u> 2801 , 3280, <u>4735</u>	12 credit hours chosen from ED <u>2720</u> 2740 , 2800, <u>2801</u> , 2803, 2806, 3210, 3730, 3801, 4450 , 4730 with no more than 6 credit hours at the 2000 level 6 additional credit hours chosen from ED 2900, 3440, 3710, 3720, 3730, 3801, 4700 , 4710, 4730, 4760-4780

Page 119, 2017-2018 Calendar, under the heading 9.9 Diploma in Adult Learning and Post-Secondary Education, amend the section as follows:

“9.9 Diploma in Adult Learning and Post-Secondary Education

The Diploma in Adult Teacher Education and the Diploma in Post-Secondary Education have been replaced with the Diploma in Adult Learning and Post-Secondary Education. Students are advised to contact the Office of Undergraduate Programs, Faculty of Education, for further consultation and information.

- The Diploma in Adult Learning and Post-Secondary Education is a part-time program and requires 30 credit hours in Education courses as outlined in **Table 15 Diploma in Adult Learning and Post-Secondary Education**.
- At least 21 of the 30 credit hours required for the Diploma must be completed at this University.

Table 15 Diploma in Adult Learning and Post-Secondary Education

Required Courses in Education	Elective Courses in Education
ED 2700, 2710, 2720 , 2730, <u>2740</u> , 2801 , 3280, <u>4735</u>	12 credit hours in Education chosen from: ED <u>2720</u> 2740 , 2800, <u>2801</u> , 2803, 2806, 3210, 3730, 3801, 4730, with no more than 6 credit hours at the 2000 level.

Page 119, 2017-2018 Calendar, following section 9.9 Diploma in Adult Learning and Post-Secondary Education, insert the following new section:

Faculty of Education (cont'd)

~~“9.9.10.1 Waiver Guidelines~~

9.10.2 Waiver Guidelines – Education 4735

A student who has at least one year of Post-Secondary or Adult instructional experience (documented) and who provides a letter from their current/former supervisor to the Office of Undergraduate Programs certifying the duration and quality of their experience, may be excused from Education 4735. Students who are excused from taking the student teaching course must substitute in its place Education 2900 or an appropriate course in Education designated Adult Learning and Post-Secondary Education or Post-Secondary Education to make up the total required credit hours for the degree.”

Page 120, 2017-2018 Calendar, under the heading 15 Course Descriptions, amend the section as follows:

~~“**4700 Student Teaching in Post-Secondary Education (PS)** applies theories of education in the learning situation; observation and demonstration of lessons; seminars in teaching techniques.
PR: ED 2710, ED 2720, ED 2730, ED 2801, ED 3280, and ED 3801, or equivalent teaching experience and permission of the course instructor~~

~~**4450 Practicum in Adult Education (PS)**—inactive course.~~

4735 Practicum in Adult and Post-Secondary Education is comprised of on-the-job supervised instructional activities designed to allow for the implementation of concepts, theory and principles of teaching, learning and curriculum in an adult and post-secondary education setting. (AL, PS)

CR: the former ED 4450 and the former ED 4700

PR: ED 2700, ED 2710, ED 2730, ED 2740, ED 3280; or equivalent as determined by the Office of Undergraduate Programs.

Abbreviated Course Title: Practicum Adult & Post-Sec Ed”

50.12 Faculty of Medicine

Page 428, 2017-2018 Calendar, under the heading 10.1 Admission to the Faculty of Medicine, amend the section as follows:

“10.1 Admission to the Faculty of Medicine

1. All applications for entry to the program of studies leading to the Doctor of Medicine (M.D.) degree are dealt with by the Admissions Office of the Faculty of Medicine and must be submitted to that office on or before the closing date (normally September 15th). No

Faculty of Medicine (cont'd)

application received after this date will be considered. An application processing fee of \$75.00 is required from all applicants.

2. Applications are reviewed after the closing date by the Admissions Committee of the Faculty of Medicine. This Committee has the delegated authority of the Faculty Council to admit or decline to admit students, following guidelines and procedures acceptable to that Council.
3. Admissions will normally be to the first year of medical studies. In exceptional circumstances, admission with advanced standing may be offered.
4. Entry to medical school is on the basis of competition for a fixed number of places. The Admissions Committee takes account of an applicant's academic background, performance on the Medical College Admissions Test (MCAT) and information on an applicant's personal characteristics and achievements as given by the applicant, by referees' reports and, in some cases, by personal interviews. Age by itself is not used as a basis for selection or rejection. Both age and the length of time away from full-time studies may be taken into consideration. The residency status of each applicant at the time of the closing date for application (normally September 15) will be determined by guidelines established by the Admissions Committee and approved by Faculty Council. For each candidate, the residency status determined at that time will apply throughout the admissions process and the period of undergraduate medical education. Priority is given to applicants who are bona fide residents of this province as well as applicants of Aboriginal descent. Further information is available on the Faculty of Medicine's website at www.med.mun.ca/Admissions/Aboriginal-Admissions-Program.aspx.
5. The Admissions Committee's decision to admit or decline to admit an applicant will be made on the basis of the competition for entry in the year of application and will be determined by the Committee's judgement of the likelihood of an applicant succeeding in the academic and professional studies leading to the award of the M.D. and in the eventual practice of medicine.
6. To be eligible for admission, an applicant shall have completed a bachelor's degree ~~including the prerequisite subjects of 6 credit hours in English~~ at a recognized university or university college before admission.

In exceptional circumstances an application may be considered from someone who does not expect to hold a bachelor's degree at the time of admission. Such an applicant will have completed at least 60 credit hours ~~including the prerequisite subjects of 6 credit hours in English~~ at a recognized university or university college before admission and be a student who has work-related or other experience acceptable to the Admissions Committee.

Faculty of Medicine (cont'd)

No application will be considered from a candidate who cannot produce evidence that the above requirements have been met or will have been met by the time of entry to the Medical School.

In addition, all applicants must write the MCAT prior to the application deadline. The MCAT should be written within the preceding five years of the date of application.

7. Applicants need to be aware of the policy related to Essential Skills and Abilities Required for the Study of Medicine. This policy outlines essential skills and abilities needed to succeed in the M.D. program and it includes technical standards for students in the program and information for students with disability. This information is available on the Faculty of Medicine's website at www.med.mun.ca/Admissions/Application-Preparation.aspx.
8. Each applicant is responsible for ensuring that all the required information on the application form, e.g. transcripts, MCAT scores, referee's reports, is supplied to the Admissions Committee, and for providing any further information required by this Committee. An application is not considered complete until these documents have been received.
9. The Admissions Committee may request that a candidate attend an interview.
10. Notification of the Committee's decision will be made to candidates by letter signed by, or on behalf of, the Chair of the Admissions Committee. No other form of notification can be considered to be official.
11. The letter of acceptance will give the successful applicant fourteen (14) days in which to confirm that he/she will accept the place offered. The signed intention to accept the offered place must be accompanied by a deposit of \$200.00 which will be credited towards tuition fees. The deposit will be forfeited if the applicant subsequently declines the place.
If no reply to the offer of a place is received within fourteen days, the offer by the Faculty of Medicine will be withdrawn on the appropriate date, and the applicant will be informed of this by letter.
12. In order to register, applicants who have been accepted as international students will be required to sign a document indicating that they will pay differential fees throughout the undergraduate medical program and that they will have the status of non-Canadians in the postgraduate matching process.
13. The Admissions Committee, at its discretion, may grant deferral of admission for one year to four successful applicants (normally not to exceed this number) in the first round of offers for any one admission cycle. An applicant must request a deferred entry at the time of responding to an offer of admission. The first round of offers are

Faculty of Medicine (cont'd)

normally confirmed by mid-May and requests for deferral are considered by mid-June.

14. Unsuccessful applicants who wish to reapply for admission are required to submit the application forms relevant to the year of re-application and will be required to enter the competition in that year. An unsuccessful applicant can meet with the Assistant Dean for Admissions or the Admissions Officer to discuss reapplying prior to the deadline for submission of a new application (normally September 15).
15. An unsuccessful applicant has the right to appeal against the decision of the Admissions Committee not to offer him/her a place, if it is felt by the applicant that the decision was reached on grounds other than those specified in Clauses 1-4 above. The appeal should be made in writing within fourteen days of the notification of the decision and should be directed to the Dean of Medicine. The letter should state clearly and fully the grounds for the appeal. If the Dean of Medicine, in consultation with the Registrar, judges the grounds to be sufficient, the formal appeals mechanism will be initiated.”

51. Report of the Academic Council of the School of Graduate Studies

51.1 Engineering – Section 5.2

Page 608, 2017-2018 Calendar, under the heading 5.2.3 Degree Requirements, amend the section as follows:

“5.2.3 Degree Requirements

1. The degree program requires the completion of 36 credit hours, 6 of which comprise a project course.
 - a. Students are required to complete 9801, 9859, 9861, 9865, 9867, 9871, 9874, and 9876.
 - b. Three elective courses must be selected; each term the Board of Studies for the program will provide a selection of eligible courses, which may include ENGI 9821, ENGI 9822, ENGI 9868, ENGI 9869, ENGI 9872, ENGI 9875, ENGI 9877, ENGI 9878, ENGI 9879, ENGI 9880/83, ENGI 9888/91, CS 6752, CS 6756, ~~PHYS 6102~~ **PHYS 6012**, and others designated by the Board of Studies for the program.
 - c. Based on their academic background, students may be required to complete additional courses at the undergraduate level.
2. Normally students will take courses as shown in **Table 1**. Students wishing to take courses in another sequence must request approval from the Board of Studies for the program.”

Page 608, 2017-2018 Calendar, under the heading 5.2.5 Courses, amend the section as follows:

Engineering – Section 5.2 (cont'd)

“5.2.5 Courses

980A/B Computer Engineering Project
9802/05 (excluding 9804) Special Topics in Computer Engineering
9806/09 Special Topics in Communications Engineering
9821 Digital Signal Processing
9822 Nonlinear Digital Image Processing and Analysis
9859 Computer Engineering Fundamentals
9861 High-Performance Computer Architecture
9865 Advanced Digital Systems
9867 Advanced Computing Concepts for Engineering
9868 ASIC Design
9869 Advanced Concurrent Programming
9871 Information Theory and Coding
9872 Digital Communications
9874 Software Design and Specification
9875 Embedded and Real-Time Systems Design
9876 Advanced Data Networks
9877 Computer and Communications Security
9878 Wireless and Mobile Communications
9879 Formal Specification and Development
9880-83 Special Topics in Computer Engineering
9888-91 Special Topics in Communications Engineering
Computer Science 6752 Applications of Computer Graphics
Computer Science 6756 Digital Image Processing
~~Physics 6102 Optics and Photonics~~ Physics 6012 Advanced Photonics”

51.2 Engineering – Section 13.12

Page 651, 2017-2018 Calendar, under the heading 13.12.3 Other Courses, amend the section as follows:

“13.12.3 Other Courses

- 9022 Marine Geotechnical Engineering
- 9052 Ice Properties and Mechanics
- ~~9090~~ 9080 /99 Special Topics in Ocean Engineering (excluding 9096)
- 9096 Marine and Offshore Ice Engineering
- 9111 Well Testing
- 9112 Multiphase Flow
- 9116 Reliability Engineering
- 9117 Offshore Petroleum Geology and Technology
- 9119 Compact Process Equipment Design
- 9120 Advanced Natural Gas Engineering
- 9150-59 Special Topics in Oil and Gas Engineering
- 9200 Industrial Internship
- 9210 Advanced Engineering Materials

Engineering – Section 13.12 (cont'd)

- 9390/94 Special Topics in Engineering Management
- 9440 Optimization Principles in Engineering
- 9495/99 Special Topics in Engineering Analysis (excluding 9496)
- 9540/49 Special Topics in Mechanics, Structures and Materials
- 9560 Applied Remote Sensing
- 9601 Environmental Pollution and Mitigation (cross-listed as Environmental Science 6004)
- 9603 Environmental Sampling and Pollutant Analysis (*cross-listed as Environmental Science 6005*)
- 9605 Water and Wastewater Treatment
- 9610/15 Special Topics in Environmental Engineering and Applied Science
- 9621 Soil Remediation Engineering
- 9622 Environmental Statistics
- 9625 Environmental Impacts of Offshore Oil and Gas Operations
- 9626 Environmental Management System
- 9628 Environmental Laboratory
- 9629 Environmental Policy and Regulations
- 9630 Pollution Prevention
- 9713 Stochastic Hydrology
- 9723 Soil Properties and Behaviour (formerly 9720)
- 9750 Advanced Topics in Analysis and Design of Reinforced Concrete (*formerly 9701*)
- 9755 Advanced Topics in Precast and Prestressed Concrete (*formerly 9702*)
- 9760/64 Special Topics in Geotechnical Engineering
- 9790 Subsea Pipeline Engineering
- 9791/99 Special Topics in Civil Engineering
- 9802/05 (excluding 9804) Special Topics in Computer Engineering”

51.3 Education – Section 11.8.2

Page 640, 2017-2018 Calendar, under the heading 11.8.2 Curriculum, Teaching and Learning Studies, amend the section as follows:

“11.8.2 Curriculum, Teaching and Learning Studies

The Master of Education in Curriculum, Teaching and Learning Studies provides opportunities for students to investigate pertinent issues in these interrelated areas from a variety of perspectives: philosophical, historical, social, cultural, cognitive, and technological. The conceptual bases of curriculum, teaching, and learning are explored and analysed along with related examples of historical and current policies and

Education – Section 11.8.2 (cont'd)

practices. The program encourages the development of broad-based insights into issues related to these areas through an emphasis on critical inquiry and reflective practice. It supports students in the development and enhancement of research capabilities and professional expertise and practice.

Students may choose between two program options in Curriculum, Teaching and Learning Studies:

Option One

Students may choose to specialize in one of a number of areas of study: ~~Computers in Education~~, Indigenous and Place-based Education, Language and Literacy Studies, Mathematics Education, Music Education, Science Education, Second Language Education, Social Justice Education, Social Studies Education, Special Education, and Teacher-Librarianship.

Option Two

In consultation with a faculty advisor, students may choose to design a program speciality which addresses their research interests. Specialty foci within Curriculum, Teaching, and Learning Studies are numerous and may include technology and web-based education, arts education, rural and multi-age education. Students may alternatively select appropriate courses from other Master of Education program offerings to develop a program to meet their learning goals. Students interested in this option are strongly encouraged to explore and to focus their research and study interests and to discuss these interests with a faculty advisor.

1. Admission Requirements

In addition to meeting the requirements in the School of Graduate Studies **General Regulations**,

- a. students must have completed a range and number of courses in Education deemed appropriate by the Faculty and Dean of Education.
- b. a minimum of two years of teaching or related experience is recommended.
- c. for a specialization in special education, a completed Bachelor of Special Education Degree or equivalent is required and enrolment will be limited to applicants articulating a research focus for which appropriate thesis supervision is available.

2. Program Requirements

- a. all students in the Master of Education Program (Curriculum, Teaching and Learning Studies) shall be required to complete:
 - 6100 Research Designs and Methods in Education
 - 6300 Teaching and Learning
 - 6602 Curriculum Studies

Education – Section 11.8.2 (cont'd)

- b. students on the thesis route must complete at least one of the research courses listed below (6100 is prerequisite):
 - 6466 Qualitative Research Methods
 - 6467 Quantitative Research Methods
 - 6468 Critical Approaches to Educational Research
 - 6469 Theoretical and Methodological Foundations of Action Research
 - 6909 Narrative Approaches to Teaching, Learning and Research
 - and at least 2 courses from any university graduate offering provided that those chosen are appropriate to the student's program
- c. students choosing Option One on the internship, paper folio, project route, and comprehensive-course route must complete at least 2 courses within one particular speciality area from the list in **Core speciality courses in the study of curriculum, teaching and learning areas** below.
- d. students choosing Option Two must choose courses that have been designated through consultation with faculty advisor during the first semester of studies in this program.
- e. students choosing the Mathematics Education specialization within Curriculum, Teaching and Learning Studies must complete 6630 Critical Issues in Mathematics Education prior to completing other Mathematics Education specialty courses.
- f. students choosing the Special Education specialization within Curriculum, Teaching and Learning Studies must complete a thesis and at least two of the required Special Education speciality courses.
- g. students on the comprehensive-course route must complete one of the following courses: E6390 Research and Development Seminar in Curriculum, Teaching and Learning Studies or E6394 Biographical Explorations of Teaching and Learning or E6913 Putting Action Research Methodologies into Practice (prereq. E6469). Normally students would be permitted to register for one of these courses only after all other course requirements have been met, or during the student's last semester of studies.
- h. to meet total credit hour requirements students may choose electives from any university graduate offering provided that those chosen are appropriate to the student's program:
 - students on the thesis route must complete a total of at least 18 credit hours

Education – Section 11.8.2 (cont'd)

- students on the internship, paper folio, or project route must complete a total of at least 24 credit hours and the appropriate course option 6391 Internship in Curriculum, Teaching and Learning Studies (6 credit hours), 6392 Project in Curriculum, Teaching and Learning Studies (6 credit hours), or 6393 Paper Folio in Curriculum, Teaching and Learning Studies (6 credit hours)
 - students on the comprehensive-course route must complete a total of at least 30 credit hours
- i. **Core speciality courses in the study of curriculum, teaching and learning areas:**
- ~~Computers in Education~~
 - ~~6610 Research on Computers in the Curriculum~~
 - ~~6620 Issues and Trends in Educational Computing~~
 - **Indigenous and Place-based Education**
 - 6394 Biographical Explorations of Teaching and Learning
 - 6462 Cultural, Landscapes, Knowledge and Pedagogy
 - 6603 Place, Ecology, and Education
 - 6923 Perspectives in Indigenous Education
 - 6924 Decolonizing Pedagogies
 - **Language and Literacy Studies**
 - 6106 Popular Culture and Literacy Education
 - 6108 Literacy and Language Education: Sociocultural Perspectives
 - 6641 Writing in the Primary, Elementary and Secondary Schools
 - 6642 Developmental Reading (K-8)
 - 6643 Contemporary Issues in Intermediate and Secondary English
 - 6645 Literature for Children and Adolescents
 - 6647 Diagnosis and Remediation of Reading and Writing Difficulties
 - 6649 Exploring Multiple Literacies
 - 6693 Literacy for the Young Child in Home and School
 - **Mathematics Education**
 - 6630 Critical Issues in Mathematics Education
 - 6634 Teaching and Learning to Solve Mathematics Problems (*prerequisite E6630*)
 - 6639 Technology and the Teaching and Learning of Mathematics (*prerequisite E6630*)
 - **Music Education**
 - 6502 Contexts of Music Education

Education – Section 11.8.2 (cont'd)

- 6503 Teaching Music from the Podium
- 6504 Musicianship, Pedagogy, and Learning
- **Science Education**
 - 6653 Contemporary Issues in Science Education I
 - 6655 The Nature of Science and Science Education
 - 6658 Teaching and Learning Scientific Concepts, Laws, and Theories
- **Second Language Education**
 - 6668 Current Issues in Second Language Education
 - 6669 Graduate Seminar in Second Language Teaching and Learning
 - 6673 Second Language Teaching, Learning and Curriculum
 - 6674 Research in Second Language
- **Social Justice Education**
 - 6105 Social and Cultural Difference and Education
 - 6106 Popular Culture and Literacy Education
 - 6108 Literacy and Language Education: Sociocultural Perspectives
 - 6440 Family School Relations: Leadership and Policy Implications
 - 6463 Relationships First: Rethinking Educational Engagement (*credit may be obtained for only one of 6463 or 6936*)
 - 6465 School Violence: Leadership and Policy Implications
 - 6468 Critical Approaches to Educational Research
 - 6909 Narrative Approaches to Teaching, Learning and Research
 - 6913 Putting Action Research Methodologies into Practice (*prerequisite: 6469 Theoretical and Methodological Foundations of Action Research*)
- **Social Studies Education**
 - 6670 Teaching and Learning Social Studies
 - 6671 Research in Social Studies Education
 - 6672 Issues and Trends in Social Studies
- **Special Education**
 - 6710 Issues in Development and Implementation of Special Education Policy and Practices
 - 6712 The Nature and Assessment of Behaviour Disorders in Children and Adolescents
 - 6714 Principles and Practices in Exceptionality
 - 6755 Nature and Assessment of Learning Disabilities

Education – Section 11.8.2 (cont’d)

- **Teacher-Librarianship**
 - 6662 Seminar in Teacher-Librarianship
 - 6664 Seminar on School Improvement
- Additional courses in the speciality areas are available.”

51.4 Business Administration – New Course 9032 and Section 10.6

Page 636, 2017-2018 Calendar, under the heading 10.6 Courses, amend the section as follows:

“10.6 Courses

Table 1 Master of Business Administration Schedule of Required Courses

8103 Statistical Applications in Management	8204 Human Resource Management
8104 Organizations: Behaviour and Structure	8205 Information Systems
8106 Marketing	8206 Managerial Finance
8107 Managing Ethics and Responsibility	8207 Operations Management
8108 Economics for Business	8208 Strategic Management
8109 Accounting for Management	8209 Leadership and Interpersonal Skills for Managers

Table 2 Master of Business Administration Schedule of M.B.A. Electives

8001 Consumer Behaviour	9306 International Strategic Management
8002-8005 Special Topics	9308 New Venture Creation
8202 Advanced Managerial Accounting	9309 Marketing Management
8203 Management Science	9310 Management Science Applications
8210 Labour Relations	9311 Seminar in Human Resource Management
9001-9019 Special Topics (excluding 9005, 9013)	9312 Financial Management
9005 International Marketing	9314 Business and Taxation Law
9013 Collective Agreement Administration and Arbitration	9315 Advanced Financial Accounting
9020 International Human Resource Management	9316 Information Systems Management
9021 Data Management	9317 Current Topics in Management
9022 Information Systems Analysis and Design	9318 Marketing Communications Management
9023-9050 Special Topics (excluding 9030, 9032, 9033, 9034, 9040, 9042)	9320 Investments and Portfolio Management
9030 International and Comparative Industrial Relations	9322 Strategic Management of Technology and Innovation
9032 Digital <u>and Social Media</u> Marketing	9323 Financial Forward, Futures, and Options Markets
9033 The International Business Environment	9324 Gender, Work and Organizations
9034 Strategic Risk Management	9326 International Finance
9040 Business Sustainability	9328 Change Management
9042 Branding with Social Media	9329 Labour Law
9103 Research in Management	Up to 6 credit hours in courses from other graduate programs within the School of Graduate Studies, as approved by the Dean of Graduate Studies on the recommendation of the Faculty of Business Administration
9301-9303 Research Project	

Business Administration – New Course 9032 and Section 10.6 (cont'd)

A selection of electives will be offered to meet the requirements of candidates as far as the resources of the Faculty of Business Administration will allow.

Table 3 Master of Business Administration Course Prerequisite/Co-requisite

Course	Prerequisite/Co-requisite*	Course	Prerequisite/Co-requisite*
8001	8106	9040	Nine courses including 8107
8103	Nil	9042	Nil
8104	Nil	9103	Nine courses completed including 8103
8106	Nil	9301	Nine courses completed
8107	Nil	9302	Nine courses completed plus 9301*
8108	Nil	9303	Nine courses completed plus 9301* and 9302*
8109	Nil	9306	8103, 8104, 8106, 8108, 8109, 8205
8202	8109	9308	8106, 8109
8203	Nil	9309	Nine courses completed including 8106
8204	Nil	9310	8203
8205	Nil	9311	Nine courses completed including 8104, 8204 or admission to the MER program
8206	8103*, 8108*, 8109	9312	Nine courses completed including 8103, 8108, 8109, 8206
8207	8103, 8108*	9314	Nine courses completed including 8103, 8108, 8109, 8206 or admission to the MER program
8208	8103, 8104, 8106, 8108, 8109, 8205*, 8206*, 8207*	9315	8109
8209	8104	9316	Nine courses completed including 8205
8210	Nil	9317	Nine courses completed
9005	Nine courses including 8106	9318	Nine courses completed including 8106
9013	Nine courses completed including 8210 or 8210 plus admission to the MER program	9320	Nine courses completed including 8103, 8108, 8109, 8206
9020	Nine courses completed including 8104 or 8204	9322	8104, 8106, 8108, 8109, 8206
9021	Nine courses completed including 8205	9323	Nine courses completed including 8103, 8108, 8109, 8206, 9320
9022	Nine courses completed including 8205	9324	Nine courses completed including 8104 or admission to the MER program
9030	Nine courses completed including 8210	9326	Nine courses completed including 8103, 8108, 8109, 8206
9032	8106	9328	Nine courses completed including 8104 or admission to the MER program
9033	Nine courses	9329	Nine courses completed including 8210 or 8210 plus admission to the MER program
9034	Nine courses		

Business Administration – New Course 9032 and Section 10.6 (cont'd)

Note:

Unless specified in **Table 3** all 9000-level courses require the prior completion of Nine courses, including any specific prerequisites or co-requisites unless otherwise specified.

51.5 Medicine – Three New Courses and Section 29.2

Page 700, 2017-2018 Calendar, under the heading 29.2.3 Graduate Courses, amend the section as follows:

“29.2.3 Graduate Courses

- 6070 Seminars in Physiological Instrumentation
- 6075 Human Physiology, Performance and Safety in Extreme Environments (HSPE)
- 6090-6101 Special Topics
- 6102 Critical Theory in Health and Society
- 6103-6119 Special Topics
- 6127 Immunology I
- 6128 Immunology II (*prerequisite: Medicine 6127*)
- 613A/B Advanced Immunological Methods (*same as the former 6130*)
- 6131-6139 Special Topics
- 6140 Basic Cardiovascular and Renal Physiology
- 6141 Cardiovascular/Renal Techniques
- 6142 Selected Topics in Cardiovascular and Renal Physiology
- 6143 Cardiovascular Anatomy
- 6144 Current Concepts in Cardiovascular and Renal Pathophysiology
- 6180 Structure, Function and Pharmacology of Muscle
- 6190 General Pharmacology
- 6192 Pharmacology of Receptors and Receptor Effector Coupling Processes
- 6193 Advanced Topics in Neuroscience
- 6194 Advanced Topics in Physiology
- 6195 Neurobiology of Nervous System Diseases
- 6196 Systems Neuroscience
- 6197 Cellular Neuroscience
- 6198 Neuroanatomy for Graduate Students (accelerated format)
- 6199 Health Sciences: Writing and Grantsmanship
- 6200 Biostatistics I (*credit may be obtained for only one of MED 6200 or MED 6262*)
- 6220 Introduction to Community Health
- 6225 Health Inequities and the Social Determinants of Health
- 6250 Basic Clinical Epidemiology
- 6255 Clinical Research Design
- 6260 Applied Data Analysis for Clinical Epidemiology

Medicine – Three New Courses and Section 29.2 (cont'd)

- 6262 Biostatistics in Clinical Medicine (*credit may be obtained for only one of MED 6200 or MED 6262*)
- 6263 Conducting and Publishing Systematic Review and Meta-analysis
- 6265 Genetics and Clinical Epidemiology
- 6270 Epidemiology I
- 6274 Chronic Disease Epidemiology
- 6275 Epidemiology II
- 6276 Current Topics in Canada's Health Care System
- 6277 Issues in Northern, Rural and Remote Health in Canada
- 6278 Advanced Biostatistics for Health Research
- 6279 Quantitative Methods for Applied Health Research
- 6280 Community Health Research Methods
- 6281 Theory and Approaches to Medical Publication
- 6282 Canadian Health Care System
- 6284 Research and Evaluation Design and Methods
- 6286 Ethical Foundations of Applied Health Research
- 6288 Policy and Decision Making
- 6290 Determinants of Health: Healthy Public Policy
- 6292 Qualitative and Quantitative Methods for Health Services Research
- 6293 Knowledge Transfer and Research Uptake
- 6294 Advanced Qualitative Methods
- 6295 Advanced Quantitative Methods
- 6296 Residency
- 6297 Theories of Social Justice in Health
- 6340 Research Topics in Cancer I
- 6341 Research Topics in Cancer II
- 6342 Basic Principles of the Pathology of Cancer
- 6390 Human Population Genetics
- 6391 Selected Topics in Human Genetics
- 6392 Applied Human Genetics
- 6393 Human Molecular Genetics
- 6394 Cancer Genetics
- 6395 Genetic Epidemiology
- 6400 Research Seminars for M.Sc. Students I (one-credit hour)
- 6401 Research Seminars for M.Sc. Students II (one-credit hour)
- 6402 Research Seminars for M.Sc. Students III (one-credit hour)
- 6403 Research Seminars for M.Sc. Students IV (one-credit hour)
- 6410 Research Seminars for Ph.D. Students I (one-credit hour)
- 6411 Research Seminars for Ph.D. Students II (one-credit hour)
- 6412 Research Seminars for Ph.D. Students III (one-credit hour)
- 6413 Research Seminars for Ph.D. Students IV (one-credit hour)
- 6420 Medical Science/Social Responsibility in Health Care: Aspects of Medical History (*same as History 6125*)
- 6580 Molecular Biology of Cancer (*prerequisites: Biology 4241, Biochemistry 4100 [or equivalent]*)

Medicine – Three New Courses and Section 29.2 (cont'd)

- 6590 Molecular Biology I (*cross-listed as Biology 6590 and credit-restricted with Biochemistry 6590*) prerequisites: Biology 4241 (or equivalent)
- 6591 Molecular Biology II (*cross-listed as Biology 6591 and credit-restricted with the former Biochemistry 6591*) prerequisites: Biology 4241 (or equivalent)
- 6900 Medical Geography I - Introduction to Geographic Information Science and Spatial Analysis in Health
- 6901 Medical Geography II - Geospatial Analysis and Modelling in Health prerequisite: 6900
- MED 6950 Simulation & Technology-based Learning in the Health Professions
- MED 6951 Assessment and Evaluation in Health Professions Education (same as Pharmacy 6951)
- MED 6953 Current Perspectives and Advances in Medical Education”

52. Memorial University of Newfoundland Students’ Union 2017-2018

The Committee on Elections and Committees has approved the following student Senators from the Memorial University of Newfoundland Students’ Union on Senate for a term of office commencing immediately and expiring on April 30, 2018:

Anna Dubinski
Dawn Murphy
Yazan Jabr
Michael O’Keefe

53. Names for Membership on Senate Standing Committees

The Committee on Elections and Committees has approved the following membership on Senate Standing Committees for a term expiring on August 31, 2020:

Senate Committee on Academic Appeals

Heather Skanes (Business) – commencing immediately
Ailsa Craig (Sociology) – commencing January 1, 2018

REGULAR AGENDA

54. Report of the Senate Committee on Undergraduate Studies

54.1 School of Science and the Environment

It was moved by Dr. Mulligan, seconded by Dr. Anderson, and carried that on page 181, 2017-2018 Calendar, under the heading 5.1.1 Arts

School of Science and the Environment (cont'd)

Degree and up to 5.1.7 Resource Management Degree, amend the sections as follows:

5.1.1 Arts Degree

Bachelor of Arts degree programs are offered under the School of Arts and Social Science ~~and the School of Science and Environment~~. The School of Arts and Social Science offers the Bachelor of Arts Degree with majors in **English Language and Literature, Historical Studies, Humanities, Psychology, Social/Cultural Studies, and Tourism Studies**. ~~The School of Science and Environment offers the~~ **Bachelor of Arts with Major in Environmental Studies**

The Bachelor of Arts degree program is comprised of 120 credit hours, 40 courses, and may be completed on a full or part-time basis. Students will examine culture, thought, prehistory and history, human interactions, and the social and natural forces that constantly transform our society. Students gain critical-thinking, analytical and communication skills needed to succeed and adapt in a changing world through the study of a major and minor. Students must complete a minimum of 120 credit hours made up of **Core Program Requirements**, an approved concentration of courses known as a Major, an approved concentration of courses known as a Minor, and elective courses. A Minor is not required for Interdisciplinary programs. However, students in such programs may choose to complete a minor. A student may not use the same course to satisfy the requirements for both a Major and a Minor except as stated in the requirements for a **Major in Computational Mathematics**.

Majors are available in English Language and Literature, ~~Environmental Studies~~, Historical Studies, Humanities, Psychology, Social/ Cultural Studies, and Tourism Studies. The requirements for a Major can be fulfilled in one of two ways:

1. a minimum of 36 credit hours in a single discipline.

Students choosing a single discipline major, with the with the exception of Bachelor of Science in Computational

Mathematics and Psychology, must complete one of the following: a minor or with the permission of the appropriate program chair(s), a second major. Actual credit hours required for specific disciplines will vary. or

2. a minimum of 72 credit hours in an interdisciplinary area.

All Majors require a minimum of 12 credit hours in 3000-level courses, 6 credit hours in 4000-level courses and 3 credit hours in a 4000- level senior project. A candidate must follow the specific requirements for each major program as set forth in the Grenfell Campus section of the University Calendar Single discipline majors are available in following areas: English, Historical Studies, Humanities, Psychology (B.A. and B.Sc.), and Tourism Studies.

School of Science and the Environment (cont'd)

Interdisciplinary majors are available in following areas: ~~Environmental Studies, and~~ Social/Cultural Studies.

A Minor requires a minimum of 24 credit hours which must be completed in a single discipline or interdisciplinary area other than that of the Major. Minors are available in the following areas: Art History, Business, Canadian Studies, Classics, Economics, English, Environmental Science, ~~Environmental Studies~~, Folklore, French, Geography, Historical Studies, Humanities, Mathematics, Philosophy, Physics, Psychology, Religious Studies, Science, Social/Cultural Studies, Sociology; and Tourism Studies. A candidate must follow the requirements for the Minor program as set forth in the Grenfell Campus section of the University Calendar. As an alternative to a Minor, a second Major may be completed and students must meet all general and departmental or program regulations for both Majors.

Elective courses to make up the total of 120 credit hours, other than those required for the core program and Major/Minor requirements, may be chosen according to the following guidelines: Any courses in arts, social science, science and fine arts, and up to 15 credit hours in other subject areas.

~~An Articulation Agreement with the College of the North Atlantic is in place for students who have completed the two-year Adventure Tourism diploma program and who wish to complete the Bachelor of Arts with Major in Environmental Studies at Grenfell Campus. For specific admission and program requirements see **Admission/Readmission Requirements for Programs Offered by the School of Arts and Social Science and Program Regulations - General and Honours Degree, School of Arts and Social Science.**~~

An Articulation Agreement with the College of the North Atlantic is in place for students who have completed the two-year Adventure Tourism and the two-year Hospitality Management diploma program and who wish to complete the Bachelor of Arts with Major in Tourism Studies at Grenfell Campus. For specific admission and program requirements see **Admission/Readmission Requirements for Programs Offered by the School of Arts and Social Science and Program Regulations - General and Honours Degree, School of Arts and Social Science.**

5.1.2 Business Degree

The Bachelor of Business Administration (B.B.A.) is offered under the School of Arts and Social Science.

The Bachelor of Business Administration is comprised of 120 credit hours, 40 courses, and may be completed on a full or part-time basis. The program is designed to deliver a comprehensive foundation in the fundamental areas of business and decision making.

School of Science and the Environment (cont'd)

Articulation Agreements with the College of the North Atlantic are in place for students who have completed the two-year Business Administration (Accounting), the two-year Business Administration (Human Resource Management), the two-year Business Administration (Marketing), the three-year Business Management (Accounting), the three-year Business Management (Human Resource Management), or the three-year Business Management (Marketing) diploma programs and who wish to complete the Bachelor of Business Administration degree program at Grenfell Campus. For specific admission and program requirements see **Admission/ Readmission Regulations for Programs Offered by the School Arts and Social Science, Bachelor of Business Administration and Program Regulations - General and Honours Degree, the School of Arts and Social Science.**

5.1.3 Education Degree

The **Bachelor of Education (Primary/Elementary) as a Second Degree** is offered under the School of Arts and Social Science.

The Bachelor of Education (Primary/Elementary) as a Second Degree is a 72 credit hour program intended for students who have completed an appropriate Bachelor's degree. This program is offered in a four semester (16 month), full-time format and commences in the Spring semester of each year. The student will learn about child development, diverse learners and much more. For specific admission and program requirements see **Admission/Readmission Regulations for the Faculty of Education, (Bachelor of Education (Primary/Elementary) as a Second Degree and Program Regulations, Bachelor of Education (Primary/Elementary) as a Second Degree.**

5.1.4 Environment and Sustainability Degree

The Bachelor of Environment and Sustainability is offered under the School of Science and the Environment.

The Bachelor of Environment and Sustainability is a four-year program comprised of 40 courses (120 credit hours) and may be completed on a full or part-time basis. The program aims to produce environmental specialists who have an understanding of ethics, as well as the many ecological, sociological, and economic factors that influence environmental decision making. The program offers students the opportunity to Major in either Resource Management or Environmental Studies. For specific admission and program requirements see **Admission/Readmission Regulations for Programs Offered by the School of Science and the Environment and Program Regulations - General and Honours Degree, School of Science and the Environment.**

School of Science and the Environment (cont'd)

Articulation Agreements with the College of the North Atlantic are in place for students who have completed the two-year Fish and Wildlife Technician or the two-year Forest Resources Technician Diploma and who wish to complete the Bachelor of Environment and Sustainability degree program at Grenfell Campus. For specific admission and program requirements see **Admission/Readmission Regulations for Programs Offered by the School of Science and the Environment and Program Regulations - General and Honours Degree, School of Science and the Environment.**

5.1.5 Fine Arts Degree

The Bachelor of Fine Arts is offered under the School of Fine Arts. The Bachelor of Fine Arts is available in **Theatre** or **Visual Arts**. For specific admission and program requirements see **Admission/Readmission Regulations for Programs Offered by the School of Fine Arts and Program Regulations - General and Honours Degree, School of Fine Arts.**

5.1.5.1 Theatre

The Bachelor of Fine Arts (Theatre) is comprised of 120 credit hours, 36 courses and is normally completed on a full-time basis. This program is designed to educate and train the student in the history, theory and practice of the theatre arts.

5.1.5.2 Visual Arts

The Bachelor of Fine Arts (Visual Arts) is comprised of 120 credit hours, 40 courses and is normally completed on a full-time basis. This professional program is designed to educate and train students in the history, theory, and practice of the visual arts.

5.1.6 Nursing Degree

The **Bachelor of Nursing (Collaborative)** is a four-year program comprised of 130 credit hours and is completed on a full-time basis. The program is designed to prepare entry-level nurses who will function within a variety of health care settings. For specific admission and program requirements see **Admission/Readmission Regulations for the School of Nursing and Program Regulations, General Degree, Bachelor of Nursing (Collaborative)**. The program is completed at Grenfell Campus and the Western Regional School of Nursing.

The Bachelor of Nursing (Collaborative) Fast-Track Option is a full-time option for current degree holders or those with advanced standing and is comprised of 94 credit hours. This Option is taken over six consecutive semesters, i.e. two calendar years. For specific admission and program requirements see **Admission/Readmission Regulations for the School of Nursing and Program Regulations, General Degree, Bachelor of Nursing (Collaborative) Fast-Track Option**. The program is completed at Grenfell Campus and the Western Regional School of Nursing.

5.1.7 Resource Management Degree

The Bachelor of Resource Management is offered under the School of

School of Science and the Environment (cont'd)

~~Science and Environment.~~

~~The Bachelor of Resource Management is a four year program comprised of 40 courses, 120 credit hours and may be completed on a full or part-time basis. The program aims to produce a different type of resource manager, graduates who have an understanding of ethics, as well as the many ecological, sociological, and economic factors. This program is currently under review. For specific admission and program requirements see **Admission/Readmission Regulations for Programs Offered by the School of Science and Environment** and **Program Regulations – General and Honours Degree, School of Science and Environment.**~~

~~Articulation Agreements with the College of the North Atlantic are in place for students who have completed the two year Fish and Wildlife Technician or the two year Forest Resources Technician Diploma. and who wish to complete the Bachelor of Resource Management degree program at Grenfell Campus. For specific admission and program requirements see **Admission/Readmission Regulations for Programs Offered by the School of Science and Environment** and **Program Regulations – General and Honours Degree, School of Science and Environment.**~~

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Page 184, 2017-2018 Calendar, under the heading 6.2.2 Bachelor of Arts Degrees, amend the section as follows:

6.1.2 Bachelor of Arts Degrees

A student may apply for admission into the Bachelor of Arts program directly from high school by indicating his/her program of choice on the University's General Application for Admission/Readmission (Undergraduate). Grenfell Campus reserves the right to limit the number of spaces available in each Major and Minor program.

Students who have graduated from the two-year Adventure Tourism Diploma Program offered by the College of the North Atlantic, or who are in their final semester of this program, can apply for entry with advanced standing into the Bachelor of Arts Degree with a Major in ~~Environmental Studies~~ or Tourism Studies offered by Grenfell Campus. Students who have graduated from the two-year Hospitality Management Diploma Program offered by the College of the North Atlantic, or who are in the final semester of this program can apply for entry with advanced standing into the Bachelor of Arts degree, Major

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~~in Tourism Studies, offered by Grenfell Campus. Students who have graduated from either the two-year Fish and Wildlife Technician program or the two-year Forest Resources Technician Diploma program offered by the College of the North Atlantic, or who are in their final semester of one of these programs, can apply for entry with advanced standing into the Bachelor of Resource Management offered by Grenfell Campus.~~

Page 187, 2017-2018 Calendar, under the heading 6.4 Admission/Readmission Regulations for Programs Offered by the School of Science and Environment, amend as follows and renumber accordingly:

6.4 Admission/Readmission Regulations for Programs Offered by the School of Science and Environment

A student may apply for admission into programs offered by the School of Science and Environment directly from high school by indicating his/her program of choice on the University's General Application for Admission/Readmission (Undergraduate). Grenfell Campus reserves the right to limit the number of spaces available in each Major and Minor program.

Applications for admission/readmission may be obtained online at www.swgc.mun.ca/registrar/Pages/apply.aspx, by e-mail at info@grenfell.mun.ca, or by contacting the University in writing to the Admissions Office, Office of the Registrar, Grenfell Campus, Arts and Science Building, Room AS277, Corner Brook, NL, Canada A2H 5G4. A complete application includes an application to the University (for those who have not attended Memorial University of Newfoundland in the three preceding semesters) and any other required supporting documentation. Application fees must be paid when the application forms are submitted.

6.4.2 Bachelor of Environment and Sustainability

A student may apply for admission into the Bachelor of Environment and Sustainability program by indicating his/her program of choice on the University's General Application for Admission/Readmission (Undergraduate). Grenfell Campus reserves the right to limit the number of spaces available in each Major and Minor program.

6.4.2.1 Direct Entry (for High School Students)

Students may apply for admission into the first year of the Bachelor of Environment and Sustainability program directly from high school by indicating this in the appropriate place on the Undergraduate Application for Admission/Readmission to Memorial University of Newfoundland. Direct entry from high school is subject to the applicant's final acceptance to the University. This form is available online at www.grenfell.mun.ca/future-students/Pages/apply-now.aspx or

School of Science and the Environment (cont'd)

in-person at the Office of the Registrar. Direct admission from high school is subject to the applicant's final acceptance to the University.

6.4.3 Bachelor of Arts with Major in Environmental Studies

~~A student may apply for admission into the Bachelor of Arts with Major in Environmental Studies program by indicating his/her program of choice on the University's General Application for Admission/Readmission (Undergraduate). Grenfell Campus reserves the right to limit the number of spaces available in each Major and Minor program.~~

6.4.3.1 Direct Entry (for High School Students)

~~Students may apply for admission into the first year of the Bachelor of Arts with Major in Environmental Studies program directly from high school by indicating this in the appropriate place on the Undergraduate Application for Admission/Readmission to Memorial University of Newfoundland. Direct entry from high school is subject to the applicant's final acceptance to the University. This form is available online at www.grenfell.mun.ca/future-students/Pages/apply-now.aspx or in person at the Office of the Registrar. Direct admission from high school is subject to the applicant's final acceptance to the University.~~

6.4.3.2 Transfers from Other Post-Secondary Institutions

~~Students who are transferring from other universities must apply for admission to the University on or before the deadlines specified in the University Diary for the semester in which they intend to begin their program, to allow sufficient time for the evaluation of transfer credits. This form is available online at www.grenfell.mun.ca/registrar/Pages/forms.aspx or in person at the Office of the Registrar.~~

6.4.4 Bachelor of Arts with Major in Environmental Studies for Graduate of the Two-Year Adventure Tourism and the Two-Year Hospitality Management Diploma Program Offered by the College of the North Atlantic

~~A student may apply for admission into the Bachelor of Arts with Major in Environmental Studies program by indicating his/her program of choice on the University's General Application for Admission/Readmission (Undergraduate). Grenfell Campus reserves the right to limit the number of spaces available in each Major and Minor program. Students must be eligible for admission or readmission to the University in a category as defined in the Calendar section **UNIVERSITY REGULATIONS** and have been awarded the two-year Adventure Tourism and the two-year Hospitality Management diploma program offered by the College of the North Atlantic.~~

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6.4.5 Bachelor of Resource Management

~~Students may apply for admission into the Bachelor of Resource Management program directly from high school by indicating his/her program of choice on the University's General Application for Admission/Readmission (Undergraduate). Grenfell Campus reserves the right to limit the number of spaces available in each Major and Minor program.~~

6.4.5.1 Direct Entry (for High School Students)

~~Students may apply for admission into the first year of the Bachelor of Resource Management program directly from high school by indicating this in the appropriate place on the Undergraduate Application for Admission/Readmission to Memorial University of Newfoundland. Direct entry from high school is subject to the applicant's final acceptance to the University. This form is available online at www.grenfell.mun.ca/future-students/Pages/apply-now.aspx or in person at the Office of the Registrar. Direct admission from high school is subject to the applicant's final acceptance to the University.~~

6.4.5.2 Transfers from Other Post-Secondary Institutions

~~Students who are transferring from other universities must apply for admission to the University on or before the deadlines specified in the University Diary for the semester in which they intend to begin their program, to allow sufficient time for the evaluation of transfer credits. This form is available online at www.grenfell.mun.ca/future-students/Pages/apply-now.aspx or in person at the Office of the Registrar.~~

6.4.6 Bachelor of Resource Management for Graduates of the Two-Year Fish and Wildlife Technician Diploma Program or the Two-Year Forest Resources Technician Diploma Program Offered by the College of the North Atlantic

~~A student may apply for admission into the Bachelor of Resource Management program by indicating his/her program of choice on the University's General Application for Admission/Readmission (Undergraduate). Grenfell Campus reserves the right to limit the number of spaces available in each Major and Minor program. Students must be eligible for admission or readmission to the University in a category as defined in the Calendar section **UNIVERSITY REGULATIONS** and have been awarded the Two-Year Fish and Wildlife Technician Diploma Program or the Two-Year Forest Resources Technician Diploma Program Offered by the College of the North Atlantic.~~

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6.4.6.1 ~~Transfers from Other Post-Secondary Institutions~~

~~Students who are transferring from other post secondary institutions must apply for admission to the University on or before the deadlines specified in the University Diary for the semester in which they intend to begin their program, to allow sufficient time for the evaluation of transfer credits and have been awarded the Two-Year Fish and Wildlife Technician Diploma Program or the Two-Year Forest Resources Technician Diploma Program Offered by the College of the North Atlantic.~~

Page 189, 2017-2018 Calendar, under the heading 7 Program Regulations – General and Honours Degrees, amend the section as follows:

7 Program Regulations - General and Honours Degrees

7.4 Grenfell Campus Core Program Requirements

Students completing the Bachelor of Arts, Bachelor of Environment and Sustainability Resource Management, and Bachelor of Science degree programs at Grenfell Campus must complete the requirements as outlined below under **Breadth of Knowledge Requirement, Literacy Requirement, and Quantitative Reasoning and Analysis Requirement.**

7.4.2 Breadth of Knowledge Requirement

Six credit hours from each of the three groups identified below for a total of 18 credit hours. The courses chosen can be any courses within the disciplines identified. However, students are not permitted to use these courses to meet the Quantitative Reasoning and Analysis requirement nor the first-year English requirements.

7.4.2.1 Breadth of Knowledge Requirement - Group A

Art History, Classics, English, History, Humanities, Languages, Philosophy, Religious Studies, Theatre, Visual Arts

7.4.2.2 Breadth of Knowledge Requirement - Group B

Anthropology, Business, Economics, Education, Environment and Sustainability, ~~Environmental Studies~~, Folklore, Gender Studies, Geography, Human Kinetics and Recreation, Political Science, Psychology, Sociology, ~~Sustainable Resource Management~~, Tourism Studies

7.4.2.3 Breadth of Knowledge Requirement - Group C

Biology, Biochemistry, Chemistry, Computer Science, Earth Sciences, Environmental Science, Mathematics, Physics, Science

7.4.3 Literacy Requirement

Thirty credit hours in Writing courses which must include 6 credit hours in first-year English. Up to 6 credit hours in languages other than English may be used to satisfy the literacy requirement. Courses in this group

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are identified with the designation W and are listed in **Table 1 Designated Writing Courses (W)**.

Courses in this category must either be completed through on-campus offerings at Grenfell Campus or be demonstrated to be equivalent to Grenfell writing courses.

7.4.4 Quantitative Reasoning and Analysis Requirement

Six credit hours in Quantitative Reasoning and Analysis courses. Courses in this group are identified with the designation QRA and are listed in **Table 2 Designated Quantitative Reasoning and Analysis Courses (QRA)**.

7.4.5 Designated Writing Courses (W)

Courses will be designated Writing courses by the Academic Studies Committee. A Writing course is a course in which a minimum of 30 percent of the course grade involves a specific component consisting of written work on which students will receive feedback. For the purpose of this regulation, the final examination will not be counted as part of the evaluated Writing component.

Table 1 Designated Writing Courses (W)

Anthropology: 2230, 2240, 2300, 2412, 2414, 2500, 3080, 3083, 3140, 3314, 3520, 3525, 4072, 4440	Humanities: 1001, 1002, 2001, 2002, 2010, 3001, 3002, 3010, 3020, 3021, 4001, 4010, 4950
Biology: 2040, 2041, 2122, 2600	Mathematics: 2130, 4950
Business: 2020, 3010, 3600, 4010, 4080, 5010, 5020, 5030, 5040, 5050	Philosophy: 1200, 1600, 2220, 2230, 2551, 2561, 2581, 2701, 2702, 3120, 3150, 3160, 3400, 3500, 3600, 3610, 3620, 3730, 3850, 3860, 3940, 4200-4790, 4200, 4250, 4700
Chemistry: 2210	Physics: 4100, 4950
Classics: 1100, 1120, 1121, 1200, 2010, 2015, 2020, 2035, 2040, 2055, 2060, 2701, 2800, 2801, 3010, 3020, 3110, 3111, 3130	Political Science: 1010, 1020, 2200, 2600, 3550, 3731
Earth Sciences: 2914, 2915	Psychology: 4910, 4925, 4950, 4951, 4959
English: All English courses listed with the Grenfell Campus English Program and English 2010	Religious Studies: 1000, 1010, 2013, 2050, 2051, 2610, 2830, 3010, 3020, 3200, 3401, 3500, 3820, 3831, 3840, 3880
Environmental Science: 2370, 2371, 3131, 3210, 3211, 3260, 4000, 4133, 4950, 4951, 4959	Science: 3000, 3001, 4000, 4950, 4951, 4959
<u>Environmental Studies: 4000, 4950</u> <u>Environment and Sustainability 4201, 4950, 4960</u>	Social/Cultural Studies: 4000, 4100, 4950
Folklore: 1000, 1050, 2100, 2230, 2300, 2401, 2500, 2600, 3130, 3200, 3300, 3606, 4440	Sociology: 2100, 2120, 2230, 2240, 2610, 3140, 3150, 3160, 3290, 3314, 3395, 4072
French: 2100, 2101, 2601, 2602, 3100, 3101	Sustainable Resource Management: 2000, 2001, 3000, 3001, 3002, 4001, 4002, 4003, 4010, 4950
Gender Studies: 2001	Theatre: 1000, 1001
Geography: 2001, 2302	Tourism: 1100, 2000, 3240, 3800, 4010, 4950

History: All History courses listed with the Grenfell Campus Historical Studies Program	Visual Arts: 2700, 2701, 3620, 3700, 3701, 3702-3721, 3820, 4700-4729, 4730, 4731, 4740, 4741
Human Kinetics and Recreation: 2300, 3330, 3340, 3350, 3410	University: 1010

7.4.6 Designated Quantitative Reasoning and Analysis Courses (QRA)

Courses will be designated Quantitative Reasoning and Analysis by the Academic Studies Committee. The Quantitative Reasoning and Analysis (QRA) Requirement is intended to help students develop a degree of appreciation of numerical, statistical and/or symbolic modes of representation, as well as an appreciation of the analysis, interpretation and broader quantitative application of such representations.

Table 2 Designated Quantitative Reasoning and Analysis Courses (QRA)

Arts Philosophy 2210, 2211	Fine Arts None
Science Biochemistry 1430 Biology 2250, 2600 Chemistry (All courses with the exception of Chemistry 1900) Computer Science (All courses) Earth Sciences 2150 Environmental Science (All courses with the exception of: 1000, 2360, 2370, 2371, 3072 and 4000) Mathematics (All courses) Statistics (All courses) Physics (All courses)	Social Science Business: 2100, 2110, 3100, 3110, 3120, 3500, 3510, 4120 Economics 2010, 2020, 3150 <u>Environment and Sustainability</u> <u>2000, 2001, 3001, 3101, 4100</u> Environmental Studies 2000 Geography 3222 Psychology 2925, 2950, 3950 Sociology 3040 Sustainable Resource Management 4000

Page 195, 2017-2018 Calendar, under the heading 7.2.6.3 Advanced Diploma in Tourism Studies, amend the section as follows:

7.2.1.1 Advanced Diploma in Tourism Studies

- The Advanced Diploma in Tourism Studies is designed for individuals already possessing a post-secondary diploma or degree in any relevant field who wish to acquire the knowledge and skills required to work in today's tourism industries. The program will benefit individuals from a wide variety of backgrounds including, Business, Environmental Science, Environment and Sustainability ~~Environmental Studies~~, Fine Arts, Historical Studies, Social/Cultural Studies, and ~~Sustainable Resource Management (proposed)~~.
- Students who wish to undertake the Advanced Diploma in Tourism Studies must have completed a post-secondary diploma or degree in any field, or possess at least five years of full-time, relevant work experience or equivalent. Application is made in the space provided on the Change of Academic Program Form, which must then be approved by the Chair of the Tourism Studies Program. Admission into this program is limited and competitive.

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- The Advanced Diploma in Tourism Studies require 30 credit hours as outlined under **Table 9 Advanced Diploma in Tourism Studies with Minor in Tourism Studies**.
- Prerequisites for all Tourism courses may be waived after consultation with, and permission of, the Chair of the Tourism Studies program.

Table 9 Advanced Diploma in Tourism Studies with Minor in Tourism Studies

30 credit hours as follows:

Tourism 1000, 1100, 2000, 3100, 3900

12 credit hours chosen from a 2000-level or 3000-level Tourism elective 3

credit hours chosen from a 4000-level Tourism course

Page 196, 2017-2018 Calendar, under the heading 7.2.7 Bachelor of Business Administration, amend Table 11 Business Electives as follows:

Table 11 Business Electives

BUSN 2320	BUSN 4030	BUSN 5040	Economics 4550
BUSN 2500	BUSN 4060	BUSN 5050	Environmental Studies 3000- Environment and Sustainability 3001
BUSN 3060	BUSN 4080	Computer Science 1600	Environmental Studies 3001- Environment and Sustainability 4201
BUSN 3100	BUSN 4120	Computer Science 1700	Environmental Studies 3085
BUSN 3110	BUSN 4130	Economics 2550	Environmental Studies 4000
BUSN 3120	BUSN 4210	Economics 3000	Mathematics 2090
BUSN 3220	BUSN 4230	Economics 3001	Political Science 2200
BUSN 3230	BUSN 4310	Economics 3010	Political Science 2600
BUSN 3240	BUSN 4510	Economics 3011	Political Science 2800
BUSN 3320	BUSN 4610	Economics 3030	Political Science 3550
BUSN 3510	BUSN 4660	Economics 3080	Political Science 3731
BUSN 3610	BUSN 4800-4850	Economics 3085	Sociology 2120
BUSN 3620	BUSN 5010	Economics 3150	Sustainable Resource Management 4003
BUSN 3800-3850	BUSN 5020	Economics 3160	
BUSN 4020	BUSN 5030	Economics 3550	

Page 206, 2017-2018 Calendar, under the heading 7.4 School of Science and Environment, amend the section as follows renumbering tables going forward:

7.4 School of Science and Environment

www.grenfell.mun.ca/Programs/Pages/programs.aspx

The School of Science and Environment offers the **Bachelor of Environment and Sustainability with Majors in Environmental Studies and Resource Management, Arts with Major in Environmental Studies**, the ~~Bachelor of Resource Management with~~

School of Science and the Environment (cont'd)

~~Major in Sustainable Resource Management~~, and the Bachelor of Science with Majors in **Computational Mathematics, Environmental Science, General Science, and Physics** general degrees.

A Bachelor of Science (Honours) degree is available in **Environmental Science**.

Minors are available in Environment and Sustainability Environmental Science, Mathematics, Physics, and Science. Students for the Bachelor of Science degree offered by the School of Science and Environment may complete a minor offered by the School of Science and Environment or the School of Arts and Social Science. See **Table 19 Minor Programs Offered by the School of Arts and Social Science** and **Table 12 Minor Programs Offered by the School of Science and the Environment**.

An articulation agreement has been established with the College of the North Atlantic for those students who have completed the three- year Environmental Technology diploma program and who wish to obtain a Bachelor of Science degree with a Major in Environmental Science.

Students previously admitted to the Bachelor of Arts, Major in Environmental Studies program and the Bachelor of Resource Management, Major in Sustainable Resource Management program must complete all program requirements by June 2021. Students currently completing the requirements of either of these programs must follow the calendar regulations for the academic year in which they were admitted to the major. Memorial University of Newfoundland calendars by academic year can be read at www.mun.ca/regoff/calendar.php

7.4.1 — Bachelor of Arts with Major in Environmental Studies

~~The Major in Environmental Studies is an interdisciplinary program which uses various theoretical and applied approaches to explore the complex, dynamic interaction of human beings and nature, considering environmental, political and economic constraints and possibilities. The Major requires a total of 78 credit hours. Students must complete 60 credit hours from the **Environmental Studies Core** and 18 credit hours from the **Environmental Studies Electives**.~~

- ~~The 120 credit hour, 40 course program may be completed on a full or part-time basis as set out under **Table 1 Bachelor of Arts with Major in Environmental Studies**.~~
- ~~A student must complete Core Program Requirements as outlined under **Grenfell Campus Core Program Requirements**.~~
- ~~A student must complete an approved concentration of courses known as a Major and elective courses to make up the required total of 40 courses, 120 credit hours. A Minor is not required for this program.~~

School of Science and the Environment (cont'd)

Table 1 Bachelor of Arts with Major in Environmental Studies

Required Courses	Elective Courses
<p>Courses as outlined under Grenfell Campus Core Program Requirements, Breadth of Knowledge Requirement, Literacy Requirement, and Quantitative Reasoning and Analysis Requirement</p>	<p>Environmental Studies Electives 18 credit hours from Environmental Studies electives, from which at least 6 credit hours must be at the 3000 or 4000 level, chosen in consultation with a faculty advisor as follows: Anthropology 3080, 3083 Biology 1001, 1002, 2600 Chemistry 1001, 1200 Earth Sciences 1000, 1002 Economics 2020 Environmental Science 2261, 2360, 2369, 2370, 2371, 3072, 4140 (or field course acceptable to the Chair of Environmental Studies) Environmental Studies 3000, 3085, 3210, 4020-4039 Folklore 2100, 2401, 4480 Geography 2302, 3350 History 3030, 4480 Humanities 3020 Human Kinetics and Recreation 3555, 3565, 4555, 4575 Philosophy 2561 Political Science 3550, 3731, 4650 Religious Studies 3880 Sociology 2120 Sustainable Resource Management 2000, 3000, 3001, 3002, 4000, 4002, 4003</p>
<p>Environmental Studies Core Earth Sciences 1000 or Environmental Science 2370 Economics 2010 Environmental Studies 1000, 2000, 2210 or 2220, 3000, 3001, 3085, 4000, 4010, 4950 Geography 1050, 2001, 2102, 2425, 3222 Political Science 2600 and one of 3550 or 3731 Sustainable Resource Management 4002 or 4003 3-credit hours chosen from Anthropology 3083 or Philosophy 2561, History 3030, Religious Studies 3880</p>	<p>Other Elective Courses Elective courses to make up the total of 120 credit hours, other than those required for the Grenfell Campus Core Program Requirement and Major/Minor requirements, may be chosen according to the following guidelines: Any courses in arts, social science, science and fine arts and Up to 15 credit hours in other subject areas.</p>
	<p>If a student decides to complete a minor, it must be comprised of 8 courses, 24 credit hours chosen from Table 19 Minor Programs Offered by the School of Arts and Social Science, or from Table 5 Minor Program Offered by the School of Fine Arts, or from Table 12 Minor Programs Offered by the School of Science and Environment.</p>

7.4.1.1 Articulation Agreement – Bachelor of Arts with Major in Environmental Studies for Students who have Graduated From the Two-Year Adventure Tourism Diploma Program Offered by the College of the North Atlantic

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- ~~Students who have graduated from the two-year Adventure Tourism Diploma Program offered by the College of the North Atlantic, or who are in their final semester of this program, can apply for entry with advanced standing into the Bachelor of Arts Degree with a Major in Environmental Studies offered by Grenfell Campus.~~
- ~~Students who have graduated from the two-year Adventure Tourism program offered by the College of the North Atlantic and who are entering the Environmental Studies program will be awarded a total of 60 credit hours toward the 120 credit hour degree program.~~
- ~~The program may be completed on a full or part time basis as set out under **Table 2 Bachelor of Arts with Major in Environmental Studies for Students who have Graduated From the Two-Year Adventure Tourism Diploma Program Offered by the College of the North Atlantic.**~~

Table 2 Bachelor of Arts with Major in Environmental Studies for Students who have Graduated From the Two-Year Adventure Tourism Diploma Program Offered by the College of the North Atlantic

Required Courses	Electives
<p>6-credit hours in 1000-level English courses 45-credit hours as follows: Earth Sciences 1000 or Environmental Science 2370 Economics 2010 Environmental Studies 2000, 3000 or 3085, 3001, 4000, 4010, 4950 Geography 1050, 2001, 2102, 2425, 3222 3-credit hours chosen from Political Science 2600, 3550, 3731 3-credit hours chosen from Anthropology 3083, History 3030, Philosophy 2561, or Religious Studies 3880</p>	<p>Environmental Studies Electives 9-credit hours from Environmental Studies electives below, from which at least 6 credit hours must be at the 3000 or 4000 level, chosen in consultation with a faculty advisor as follows: Anthropology 3080, 3083 Biology 1001, 1002, 2600 Chemistry 1001, 1200 Earth Sciences 1000, 1002 Economics 2020 Environmental Science 2261, 2360, 2369, 2370, 2371, 3072, 4140 (or field course acceptable to the Chair of Environmental Studies) Environmental Studies 3000, 3085, 4020 4039 Folklore 2100, 2401, 4480 Geography 2302, 3350 History 3030, 4480 Humanities 3020 Human Kinetics and Recreation 3565, 4575 Philosophy 2561 Political Science 3550, 3731, 4650 Religious Studies 3880 Sociology 2120 Sustainable Resource Management 2000, 3000, 3001, 3002, 4000, 4002, 4003 When selecting elective or core courses, students must complete 6-credit hours to satisfy Grenfell Campus Core Program Requirements, Breadth of Knowledge Requirement, Group A.</p>

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~~7.4.2 Bachelor of Resource Management with Major in Sustainable Resource Management~~

~~The 120 credit hour, 40 course Bachelor of Resource Management with Major in Sustainable Resource Management program may be completed on a full or part-time basis as set out under **Table 3 Bachelor of Resource Management with Major in Sustainable Resource Management.**~~

~~The program consists of a Sustainable Resource Management core which provides an interdisciplinary understanding of management activities within the context of the physical, social and economic environments.~~

~~A Minor is not required for this program.~~

~~Table 3 Bachelor of Resource Management with Major in Sustainable Resource Management~~

Required Courses	Elective Courses
Courses as outlined under Grenfell Campus Core Program Requirements, Breadth of Knowledge Requirement, Literacy Requirement, and Quantitative Reasoning and Analysis Requirement	33 credit hours in elective courses. When selecting electives, students are reminded that the Core Requirements for a Grenfell Campus degree program must be met.
87 credit hours as follows: Biology 1001, 1002, 2600 Chemistry 1200 and 1001, or equivalent Economics 2010 Environmental Studies 2000, 3000, 3001, 4000 Geography 1050, 2425 Statistics 2500 Sustainable Resource Management 2000, 2001, 3000, 3001, 3002, 4000, 4001, 4002 or 4003, 4010, 4950 6 credit hours from Biology 2010, Biology 2122, Biology 2210, Environmental Science 2371, Environmental Science 2369 3 credit hours from Earth Sciences 3811, Environmental Science 3072, 3110, 3130, 3131, 4132 6 credit hours in first year English 3 credit hours from Philosophy 2561, Political Science 3550, Religious Studies 3880	

~~7.4.2.1 Articulation Agreement – Bachelor of Resource Management for Graduates of the Two-Year Fish and Wildlife Technician Diploma Program Offered by the College of the North Atlantic~~

~~Students who have graduated from the two-year Fish and Wildlife Diploma Program offered by the College of the North Atlantic and who are entering the Bachelor of Resource Management Program will be awarded a total of 60 credit hours towards the 120 credit-hour degree program.~~

~~Students will be required to complete an additional 60 credit hours as outlined under **Table 4 Bachelor of Resource Management for Graduates of the Two-Year Fish and Wildlife Technician Diploma Program Offered by the College of the North Atlantic.**~~

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Table 4 Bachelor of Resource Management for Graduates of the Two-Year Fish and Wildlife Technician Diploma Program Offered by the College of the North Atlantic

Required Courses	Elective Courses
54 credit hours as follows: Chemistry 1200, 1001 Economics 2010 English 1000 Environmental Studies 3000, 3001, 4000 Geography 1050 Sustainable Resource Management 2000, 2001, 3000, 3001, 3002, 4000, 4001, 4010, 4950 3 credit hours from Environmental Science 3072, 3110, 3130, 3131 or Earth Sciences 3811	6 credit hours in elective courses of which 3 credit hours must be chosen from Art History, Classics, English, History, Humanities, Languages, Philosophy, Religious Studies, Theatre, or Visual Arts

7.4.2.2 Articulation Agreement – Bachelor of Resource Management for Graduates of the Two-Year Forest Resources Technician Diploma Program Offered by the College of the North Atlantic

- Students who have graduated from the two year Forest Resources Diploma Program offered by the College of the North Atlantic and who are entering the Bachelor of Resources Management Program will be awarded a total of 60 credit hours towards the 120 credit-hour degree program.
- Students will be required to complete an additional 60 credit hours as outlined under **Table 5 Bachelor of Resource Management for Graduates of the Two-Year Forest Resources Technician Diploma Program Offered by the College of the North Atlantic.**

Table 5 Bachelor of Resource Management for Graduates of the Two-Year Forest Resources Technician Diploma Program Offered by the College of the North Atlantic

Required Courses	Elective Courses
57 credit hours as follows: Biology 1002, 2600 Chemistry 1200, 1001 Economics 2010 English 1000 Environmental Studies 3000, 3001, 4000 Geography 1050 Sustainable Resource Management 2000, 2001, 3000, 3001, 3002, 4000, 4001, 4010, 4950	3 credit hours in elective courses chosen from Art History, Classics, English, History, Humanities, Languages, Philosophy, Religious Studies, Theatre, or Visual Arts.

7.4.1 Bachelor of Environment and Sustainability with Majors in Resource Management or Environmental Studies

The 120 credit hour, 40 course Bachelor of Environment and Sustainability with majors in Resource Management or Environmental Studies program may be completed on a full or part-time basis as set out under **Table 1 Bachelor of Environment and Sustainability with Majors in Resource Management or Environmental Studies**

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The program consists of a common set of core courses that provide an interdisciplinary understanding of environmental studies and resource management issues within the context of the physical, social and economic environments, and two sets of courses that provide specialized training in either resource management or environmental studies.

A Minor is required for this program.

Table 1 Bachelor of Environment and Sustainability with Majors in Resource Management or Environmental Studies

<u>Required Courses</u>			
<u>Common Courses</u>	<u>Major in Environmental Studies</u>	<u>Major in Resource Management</u>	<u>Additional Requirements</u>
42 credit hours in the following courses: <u>Environment and Sustainability 1000, 2000, 2001, 3000, 3001, 4000, 4010</u> <u>Environmental Science 1000</u> <u>Geography 1050, 3222</u> <u>Economics 1010, 3080</u> <u>Political Science 3731</u> <u>Three credit hours in first year English</u>	<u>Economics 2550, 3085</u> <u>Environment and Sustainability 2200 or 2201, 4200, 4201, 4950</u> <u>Political Science 2600, 3550</u> <u>Sociology 3040,</u> <u>One of: Philosophy 2561, Religious Studies 3880, Humanities 3020, Historical Studies 3030</u>	<u>Biology 1000, 1001, 2600, Environment and Sustainability 3100, 3101, 4100, 4960</u> <u>Environmental Science 4132, 4140 (or equivalent field course from Biology, Earth Science or Geography)</u>	Courses as outlined under <u>Grenfell Campus Core Program Requirements, Breadth of Knowledge Requirement, and quantitative Reasoning and Analysis Requirement</u> Elective courses to make up the total of 120 credit hours

7.4.1.1 Articulation Agreement - Bachelor of Environment and Sustainability with Majors in Resource Management or Environmental Studies for Graduates of the Two-Year Fish and Wildlife Technician Diploma Program Offered by the College of the North Atlantic

Students who have graduated from the two-year Fish and Wildlife Diploma Program offered by the College of the North Atlantic and who are entering the Bachelor of Environment and Sustainability Program will be awarded a total of 60 credit hours towards the 120 credit hour degree program.

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Students will be required to complete an additional 60 credit hours as outlined under **Table 2 Bachelor of Environment and Sustainability** School of Science and the Environment (cont'd)

with Majors in Resource Management or Environmental Studies for Graduates of the Two-Year Fish and Wildlife Technician Diploma Program Offered by the College of the North Atlantic.

Table 2 Bachelor of Environment and Sustainability with Majors in Resource Management or Environmental Studies for Graduates of the Two-Year Fish and Wildlife Technician Diploma Program Offered by the College of the North Atlantic

<u>Required Courses</u>		<u>Electives</u>
<u>Major in Environmental Studies</u>	<u>Major in Resource Management</u>	
<u>Economics 1010, 3080, 3085 Environment and Sustainability 1000, 2000, 2001, 2200 or 2201, 3000, 4000, 4010, 4200, 4201, 4950 Geography 1050, 3222 Political Science 3550, 3731 Sociology 3040 Three credit hours in first year English</u>	<u>Economics 1010, 3080 Environment and Sustainability 1000, 2000, 2001, 3000, 3001, 3100, 3101, 4000, 4010, 4100, 4960 Environmental Science 4140 (or equivalent field course from Biology, Earth Science or Geography) Political Science 3731 Geography 1050, 3222 Three credit hours in first year English</u>	<u>3 (Environmental Studies Major) or 6 (Resource Management Major) credit hours in elective courses. Three of these credit hours must be chosen from Art History, Classics, English, History, Humanities, Languages, Philosophy, Religious Studies, Theatre, or Visual Arts</u>

7.4.1.2 Articulation Agreement - Bachelor of Environment and Sustainability with Majors in Resource Management or Environmental Studies for Graduates of the Two-Year Forest Resources Technician Diploma Program Offered by the College of the North Atlantic

Students who have graduated from the two-year Forest Resources Diploma Program offered by the College of the North Atlantic and who are entering the Bachelor of Environment and Sustainability Program will be awarded a total of 60 credit hours towards the 120 credit-hour degree program.

Students will be required to complete an additional 60 credit hours as outlined under **Table 3 Bachelor of Environment and Sustainability with Majors in Resource Management or Environmental Studies for Graduates of the Two-Year Forest Resources Technician Diploma Program Offered by the College of the North Atlantic.**

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Table 3 Bachelor of Environment and Sustainability with Majors in Resource Management or Environmental Studies for Graduates of the Two-Year Forest Resources Technician Diploma Program Offered by the College of the North Atlantic

<u>Required Courses</u>		<u>Electives</u>
<u>Major in Environmental Studies</u>	<u>Major in Resource Management</u>	
<u>Economics 1010, 3080, 3085</u> <u>Environment and Sustainability</u> <u>1000, 2000, 2001, 2200 or 2201,</u> <u>3000, 4000, 4010, 4200, 4201,</u> <u>4950</u> <u>Geography 1050, 3222</u> <u>Political Science 3550, 3731</u> <u>Sociology 3040</u> <u>Three credit hours in first year</u> <u>English</u>	<u>Economics 1010, 3080</u> <u>Environment and Sustainability</u> <u>1000, 2000, 2001, 3000, 3001,</u> <u>3100, 3101, 4000, 4010, 4100,</u> <u>4960</u> <u>Environmental Science 4140 (or</u> <u>equivalent field course from</u> <u>Biology, Earth Science or</u> <u>Geography)</u> <u>Political Science 3731</u> <u>Geography 1050, 3222</u> <u>Three credit hours in first year</u> <u>English</u>	3 (Environmental Studies Major) or 6 (Resource Management Major) credit hours in elective courses. Three of these credit hours must be chosen from Art History, Classics, English, History, Humanities, Languages, Philosophy, Religious Studies, Theatre, or Visual Arts

Table 4 Suggested Program of Study for the Bachelor of Environment and Sustainability.

<u>Year</u>	<u>Semester</u>	<u>Common Courses</u>	<u>Major in Environmental Studies</u>	<u>Major in Resource Management</u>
<u>First</u>	<u>F</u>	<u>ENSU 1000</u> <u>GEOG 1050</u> <u>ECON 1010</u>		<u>BIOL 1001</u>
	<u>W</u>	<u>ENVS 1000</u> <u>ENGL 1000</u>	<u>POSC 2600</u>	<u>BIOL 1002</u>
<u>Second</u>	<u>F</u>	<u>ENSU 2000</u> <u>GEOG 3222</u>	<u>ENSU 2200*</u>	<u>BIOL 2600</u>
	<u>W</u>	<u>ENSU 2001</u>	<u>ENSU 2201*</u> <u>One of: PHIL 2561, RELS</u> <u>3880, HUMN 3020, HIST 3030</u>	
<u>Third</u>	<u>F</u>	<u>POSC 3731</u> <u>ECON 3080</u>	<u>POSC 3550</u> <u>ECON 2550</u>	<u>ENSU 3100</u> <u>ENSU 3101</u>
	<u>W</u>	<u>ENSU 3000</u> <u>ENSU 3001</u>	<u>SOCI 3040</u> <u>ECON 3085</u>	
<u>Fourth</u>	<u>F</u>	<u>ENSU 4010</u>	<u>ENSU 4200</u>	<u>ENSU 4100</u> <u>ENVS 4132, 4140**</u>
	<u>W</u>	<u>ENSU 4000</u>	<u>ENSU 4201</u> <u>ENSU 4950</u>	<u>ENSU 4960</u>

* students enrolled in the Environmental Studies major are required to take either ENSU 2200 or ENSU 2201

** or an equivalent field course from Biology, Earth Science, or Geography

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Page 210, 2017-2018 Calendar, under the heading 7.4.4 Bachelor of Science with Major in Environmental Science, amend the section as follows:

7.4.3 Bachelor of Science with Major in Environmental Science

The Major consists of an Environmental Science Core which provides a broad appreciation of the interrelationships inherent in any study of the environment and one of two possible streams which provide the depth and focus for the degree program.

- The 120 credit hour, 40 course program may be completed on a full or part-time basis as set out under **Table 7 Bachelor of Science with Major in Environmental Science**.
- A student must complete Core Program Requirements as outlined under **Grenfell Campus Core Program Requirements**.
- A student must complete an approved concentration of courses known as a Major and elective courses to make up the required total of 40 courses, 120 credit hours. A Minor is not required for this program.

Table 7 Bachelor of Science with Major in Environmental Science

Required Courses	Elective Courses
Courses as outlined under Grenfell Campus Core Program Requirements, Breadth of Knowledge Requirement, Literacy Requirement, and Quantitative Reasoning and Analysis Requirement .	Elective courses to make up the total of 120 credit hours, other than those required for the Grenfell Campus Core Program Requirement and Major/Minor requirements, may be chosen according to the following guidelines: Any courses in arts, social science, science and fine arts and Up to 15 credit hours in other subject areas.

<p>Environmental Science Core 45 credit hours as follows: Biology 1001, 1002, 2600 Earth Sciences 1000 Mathematics 1000 (or 1080 and 1081), Statistics 2550 or equivalent One of Physics 1020 or 1050 and one of Physics 1021 or 1051 Environmental Science 4000 Environmental Science 4950 (or 4951) a minimum of 6 credit hours chosen from Anthropology 3083, Economics 2010, 3080 Environmental Studies 3000, Environmental Studies 4000, Environment and Sustainability 4201, Philosophy 2561, Political Science 3550, Political Science 3731, Religious Studies 3880 a minimum of 9 credit hours chosen from Environmental Science 2261, Environmental Science 2360, Environmental Science 2370, Environmental Science 2371, Environmental Science 2430, Environmental Science 2450, Environmental Science 3072, Environmental Science 3470, Environmental Studies Environment and Sustainability 2000 (this course is strongly recommended for the Biology Stream of the Environmental Science program) It is strongly recommended that students considering the Chemistry stream of the Environmental Science program complete Mathematics 1000, Physics 1020 or 1050 and one of Physics 1021 or 1051 in their first year.</p>	<p>If a student decides to complete a minor, it must be comprised of 8 courses, 24 credit hours chosen from Table 19 Minor Programs Offered by the School of Arts and Social Science, or from Table 5 Minor Program Offered by the School of Fine Arts, or from Table 12 Minor Programs Offered by the School of Science and Environment.</p>
<p>Environmental Science Streams 39 credit hours in one of the following streams: Biology stream Biology 2010, 2122 Chemistry 1200/1001 sequence or Chemistry 1050/1051 sequence, and one of Chemistry 2210 or Chemistry 2301 or 2440 or 2400/2401 sequence, or Chemistry 1010/1011 sequence and Chemistry 2440 Environmental Science 3110, 3130 3131, 4132, 4140 (or equivalent field course) Two of Environmental Science 4069, 4131, 4133, 4240, 4479 one additional laboratory (Science/Statistics/GIS) course beyond the first year level excluding Environmental Science Core courses. A course used to fulfill a stream requirement cannot also be used as a Group C course in the Environmental Science Core. Chemistry stream Chemistry 1200/1001 sequence or Chemistry 1050/1051 sequence. It is strongly recommended that students complete one of these sequences of Chemistry courses in their first year. Chemistry 2210, 2301/2302, Chemistry 2400/2401 or equivalent Environmental Science 2261, 3210, 3211, 3260, 3261, 4230 Two of Environmental Science 4069, 4131, 4240, 4249, 4479 Mathematics 1001 which should be completed in the first year of studies</p>	

School of Science and the Environment (cont'd)

Program Offered by the College of the North Atlantic, amend the section as follows:

7.4.4.1 Articulation Agreement - Bachelor of Science with Major in Environmental Science for Graduates of the Three-Year Environmental Technology Diploma Program Offered by the College of the North Atlantic

- The program may be completed on a full or part-time basis as set out under **Table 8 Bachelor of Science with Major in Environmental Science for Graduates of the Three-Year Environmental Technology Diploma Program Offered by the College of the North Atlantic**.
- An articulation agreement has been established with the College of the North Atlantic for those students who have completed the three-year Environmental Technology diploma program and who wish to obtain a Bachelor of Science degree (Major in Environmental Science). Students who have graduated from the three-year Environmental Technology Diploma Program offered by the College of the North Atlantic, or who are in their final semester of this program, can apply for entry with advanced standing into the Environmental Science Degree Program offered at Grenfell Campus. Upon admission to the university, such students will enter the second year of either stream of the Environmental Science Degree Program.
- Students will be given unspecified credit for 45 credit hours towards the 120 credit-hour degree program. Included in these 45 credit hours will be 9 credit hours for unspecified writing courses, of which 6 credit hours will be at the 1000 level and three will be at the 2000 level. In addition, 6 of these credit hours will be for unspecified credit at the 2000 level satisfying Group B, breadth of knowledge requirement.
- Students gaining entry into the Environmental Science Degree Program at Grenfell Campus will need to satisfy all other core program requirements specified for Grenfell Campus degree programs. As well, they will need to satisfy all other course requirements specified for their specific stream in Environmental Science and meet the requirements outlined under **Table 8 Bachelor of Science with Major in Environmental Science for Graduates of the Three-Year Environmental Technology Diploma Program Offered by the College of the North Atlantic**.

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Table 8 Bachelor of Science with Major in Environmental Science for Graduates of the Three-Year Environmental Technology Diploma Program Offered by the College of the North Atlantic

Required Courses
6 credit hours from Group A Breadth of Knowledge Requirement and 21 credit hours in additional designated Writing courses which may include Environmental Science core and stream courses
Environmental Science Core Biology 2600 Environmental Science 4000 Environmental Science 4950 Statistics 2550 or equivalent 6 credit hours from Anthropology 3083, Economics 2010, 3080, Environmental Studies 3000 , Philosophy 2561, Political Science 3731, Political Science 3550, Religious Studies 3880 9 credit hours from Environmental Science 2261, 2360, 2370, 2371, 2430, 2450, 3072, 3470, Environmental Studies Environment and Sustainability 2000 or equivalent
one of the following streams: Biology Stream Biology 2010, 2122 the former Chemistry 2300 or 2440 or 2400/2401 Environmental Science 3110, 3130, 3131, 4132, 4140 (or an equivalent field course) 6 credit hours from Environmental Science 4069, 4131, 4133, 4240, 4479 3 credit hours in an additional science or statistics laboratory course at the 2000 level or higher, excluding Environmental Science core courses Chemistry Stream Chemistry 2210, the former 2300, 2400, 2401 Environmental Science 2261, 3210, 3211, 3260, 3261, 4230 6 credit hours from Environmental Science 4069, 4131, 4240, 4249, 4479

Page 212, 2017-2018 Calendar, under the heading 7.4.5 Bachelor of Science with Major in General Science, amend the section as follows:

7.4.5 Bachelor of Science with Major in General Science

Students completing the Major in General Science will complete a General Science Core. In addition, they will complete a minimum of 24 credit hours (or 18 credit hours in the case of Mathematics) in each of three streams chosen from Biology, Chemistry, Earth Systems, Mathematics or Physics. A student may not use the same course to satisfy the requirements of more than one stream. Students planning their course selection should be aware of the fact that most senior level science courses have one or more specified prerequisites.

- The 120 credit hour, 40 course program may be completed on a full or part-time basis as set out under **Table 9 Bachelor of Science with Major in General Science**.
- A student must complete Core Program Requirements as outlined under **Grenfell Campus Core Program Requirements**.
- A student must complete an approved concentration of courses known as a Major and elective courses to make up the required total of 40 courses, 120 credit hours. A Minor is not required for this program.

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Table 9 Bachelor of Science with Major in General Science

Required Courses	Elective Courses
<p>Courses as outlined under Grenfell Campus Core Program Requirements, Breadth of Knowledge Requirement, Literacy Requirement, and Quantitative Reasoning and Analysis Requirement</p>	<p>Elective courses to make up the total of 120 credit hours, other than those required for the Grenfell Campus Core Program Requirement and Major/Minor requirements, may be chosen according to the following guidelines: Any courses in arts, social science, science and fine arts and Up to 15 credit hours in other subject areas.</p>
<p>General Science Core Mathematics 1000, 1001 Physics 1050 (or 1020), 1051 (or 1021). Students in the Physics Stream require Physics 1050, 1051. Science 4000, 4950</p>	<p>If a student decides to complete a minor, it must be comprised of 8 courses, 24 credit hours chosen from Table 19 Minor Programs Offered by the School of Arts and Social Science, or from Table 5 Minor Program Offered by the School of Fine Arts, or from Table 12 Minor Programs Offered by the School of Science and Environment.</p>
<p>General Science Streams 24 credit hours in each of three streams, chosen from the following list of courses: Biology: Biology 1001, 1002 Eighteen credit hours from Biology 2010, 2122, 2210, 2250, 2600, 3053, Environmental Science 3072, 3110, 3130, 3131, 4140 (or equivalent field course) where at least 6 credit hours must be beyond the 2000 level. Chemistry: Chemistry 1001, and 1200 (or equivalents), 2210, 2301 or 2302, 2400 and 2401, another 6 credit hours from Environmental Science 3210, 3211, 4240 Earth Systems: Earth Sciences 1000, 1001 or 1002 Any 18 credit hours (six courses) from the following list, at least 6 credit hours of which are beyond the 2000 level: Environmental Studies <u>Environment and Sustainability</u> 2000, 3001, Environmental Science 2360, 2369, 2370, 2371, 2430, 2450, 3072, 3470, 4069, 4479, Earth Sciences 2150, 3811. Mathematics: Mathematics 1000, 1001, 2000, 2050, 2320 Nine additional credit hours beyond the 1000 level chosen from Mathematics or Statistics, at least 6 which must be beyond the 2000 level. Physics: Physics 1050, 1051, 2056, 2820, 3060, 3220 Two of Physics 2053, 2151, 2400, 2553, 3160, 3180, Earth Sciences 2150, Environmental Science 2430, 2450, 3470, 4479</p>	

Page 214, 2017-2018 Calendar, under the heading 7.4.7 Minor Programs Offered by the School of Science and Environment, amend the section as follows:

School of Science and the Environment (cont'd)

7.4.7 Minor Programs Offered by the School of Science and Environment

Table 12 Minor Programs Offered by the School of Science and Environment

<p><u>Environment and Sustainability Minor</u> <u>Environment and Sustainability 1000, 2000, 2001, 3000</u> <u>Environmental Science 1000</u> <u>9 additional credit hours in Environment and Sustainability which must be at the 3000 or 4000 level</u></p>
<p><u>Environmental Science Minor</u> Biology 1001, 1002 and 2600 or Chemistry 1200, 1001, and one of Chemistry 2440 or Environmental Science 2261 Additional 15 credit hours in science courses within the Environmental Science program of which at least 6 credit hours must be at the 3000 or 4000 level</p>
<p><u>Environmental Science Biology Minor</u> Biology 1001, 1002, 2010, 2122, 2600 3 credit hours from Environmental Science 3110, 3130, 3131, 4131 An additional 6 credit hours in courses with the Environmental Science designation of which at least 3 credit hours must be at the 3000 or 4000 level.</p>
<p><u>Environmental Studies Minor</u> Environmental Studies 1000, 2000 and 6 credit hours chosen from the Environmental Studies Core. 12 credit hours chosen from the Environmental Studies Electives. The courses chosen must be beyond the 1000 level and from at least three subject areas.</p>
<p><u>Environmental Science Chemistry Minor</u> Chemistry 1200, 1001, 2210, the former Chemistry 2300 (or 2301), Chemistry 2440 3 credit hours from Environmental Science 3210, 3261, 4240 An additional 6 credit hours in courses with the Environmental Science designation of which at least 3 credit hours must be at the 3000 or 4000 level</p>
<p><u>Mathematics Minor</u> Mathematics 1000, 1001 either 18 additional credit hours from Mathematics and Statistics courses at the 2000 level or higher, at least 6 credit hours shall be in courses at the 3000 level or higher (Physics 3820 can be used in place of a Mathematics course at the 3000 level); or 15 additional credit hours from Mathematics and Statistics courses at the 2000 level or higher, at least 6 credit hours shall be in courses at the 3000 level or higher (Physics 3820 can be used in place of a Mathematics course at the 3000 level); and 3 credit hours in one of Computer Science 1510, 1710, or Engineering 1020</p>
<p><u>Physics Minor</u> Physics 1050 (or 1020), 1051, 2053, 2056, 2820. An additional 9 credit hours in Physics at the 2000-level or above.</p>
<p><u>Science Minor</u> The Minor in Science may be chosen in courses from the following disciplines: Biology, Chemistry, Computer Science, Earth Sciences, Environmental Science, Mathematics, Physics, Science, and Statistics. Students who have completed courses drawn from other Science disciplines must obtain approval of the Head of Science. Mathematics 1000 6 additional credit hours in first year science courses (At least 3 credit hours must be</p>

in a laboratory course chosen from any science discipline except mathematics). Five science courses beyond the 1000 level, at least 6 credit hours of which must be beyond the 2000 level. (Mathematics 1001 may be substituted for one of the 2000 level science courses).

Students for the Bachelor of Science degree offered by the School of Science and Environment may complete a minor offered by the School of Science and Environment, the School of Arts and Social Science or the School of Fine Arts. See **Table 19 Minor Programs Offered by the School of Arts and Social Science**, or from **Table 5 Minor Program Offered by the School of Fine Arts**, or from **Table 12 Minor Programs Offered by the School of Science and Environment**

Page 216, 2017-2018 Calendar, under the heading 8.9 Honours in Environmental Science (B.Sc.), amend the section as follows:

8.9 Honours in Environmental Science (B.Sc.)

8.9.1 Course Requirements for Honours in Environmental Science (B.Sc.)

1. Students must meet the General Regulations for Grenfell Campus Bachelor of Science degree.
2. Students must complete 75 credit hours as follows:
 - a. the Environmental Science Core requirements as outlined under **Bachelor of Science with Major in Environmental Science**.
 - b. the course requirements of a specific stream as outlined under **Bachelor of Science with Major in Environmental Science**.
3. Students must complete 3 additional credit hours in courses at the 4000 level. These courses normally will be drawn from the student's Honours stream as follows:
 - a. For the Honours Bachelor of Science in Environmental Science (Biology), a further course chosen from:
Environmental Science 4069, 4131, 4133, 4240, 4479
 - b. For the Honours Bachelor of Science in Environmental Science (Chemistry), a further course chosen from:
Environmental Science 4069, 4131, 4240, 4249, 4479

Students, in close consultation with a faculty advisor and the agreement of the Chair of the Program, may select fourth-year honours requirement courses in place of those required above, so long as such selections are consistent with the Major to which they are added. Such honours selections will be subject to approval by the Academic Studies committee.

4. Honours graduates of the Environmental Science Program will have also completed a two-semester research project consisting of a research proposal and literature review course (Environmental Science 4951) and a research project course (Environmental Science 4959).
5. In order to be considered for graduation with an Honours degree, the candidate must satisfy the regulations regarding **Academic Standing** as specified under **Honours Degrees**.

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Courses used to calculate the academic standing as outlined under **Honours Degrees** include all required Environmental Science and Chemistry courses for the Chemistry stream students and all required Environmental Science and Biology courses for the Biology stream students, excluding, in both cases, 1000 level courses.

More specifically, courses normally used for calculations would be:

Biology stream

Biology 2010, 2122, 2600

Three of: Environmental Science 2261, 2360, 2370, 2371, 2430, 2450, 3072, 3470, or ~~Environmental Studies~~

~~Studies~~ Environment and Sustainability 2000

Environmental Science 3110, 3130, 3131, 4132, 4140 (or equivalent)

Three of: Environmental Science 4069, 4131, 4133, 4240, 4479

Environmental Science 4000, 4951, 4959

Chemistry stream:

Chemistry 2210, 2301, 2302, 2400, 2401

Two of: Environmental Science 2360, 2370, 2371, 2430, 2450, 3072, 3470, or ~~Environmental Studies~~ Environment and Sustainability 2000.

Environmental Science 2261, 3210, 3211, 3260, 3261, 4230

Three of: Environmental Science 4069, 4131, 4240, 4249, 4479

Environmental Science 4000, 4951, 4959

Page 228, 2017-2018 Calendar, following the section 13.11 English as a Second Language, insert the following new section and renumber accordingly:

13.12 Environment and Sustainability

Environment and Sustainability courses are designated by ENSU

The following number scheme is used to identify courses:

1st digit = year

2nd digit indicates specialization

0 = common

1 = Resource Management

2 = Environmental Studies

9 = Independent Research Project

1000 Introduction to Sustainability examines historical and contemporary models of resource management and decision making as well as the supporting theoretical basis for an interdisciplinary approach to natural resources that includes ecological, economic, social and political perspectives. Case studies will be presented from Newfoundland and Labrador, across Canada, and around the world.

CR: the former EVST 1000, the former SRMG 2000

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2000 Introduction to Geographic Information Systems explores the structure, design, science, and applications of digital geospatial information and geospatial technologies. These include Geographic Information Systems (GIS), Global Positioning Systems (GPS) and Remote Sensing (i.e. 3S technology), and the Geoweb such as Google Earth, Location Based Services (LBS). Students will also gain exposure to hands-on exercise and analysis on the current GIS software.

LH: 3

PR GEOG 1050 or ENVS 1000 or EASC 1002

CR: the former EVST 2000, GEOG 2195

2001 Introduction to Systems Thinking exposes students to complex system dynamics that challenge our understanding of environmental and resource management. It is designed to help students develop a systems' intuition for analyzing environmental and resource management problems and provide the skills needed to better understand complex interactions within and among natural and human systems. It covers the introduction of basic structure and behavior of systems and key interrelationships in social-ecological systems.

PR ENSU 1000

CR the former SRMG 2001

2200 Outdoor Pursuits - Fall introduces the theoretical rationale and practical skills needed to demonstrate basic proficiency in several of the following activities: minimal-impact camping, wilderness cooking, hiking, kayaking, canoeing, navigating with map and compass, outdoor safety, search and rescue, and group management. The major focus of this course will be the practical application of learned skills.

CR: the former EVST 2210

AR: attendance is required

OR: 3 hours of practicum per week

2201 Outdoor Pursuits - Winter introduces the theoretical rationale and practical skills needed to demonstrate basic proficiency in several of the following activities: navigating with map and compass, outdoor safety, search and rescue, group management, cross-country skiing, telemark skiing, downhill skiing, snowshoeing, winter camping, and winter survival techniques. The major focus of this course will be the practical application of learned skills.

CR: the former EVST 2220

AR: attendance is required

OR 3 hours of practicum per week

3000 Human Dimensions of Resource Management explores how human attitudes and beliefs can be incorporated into resource and environmental management decisions and strategies. While this course

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will focus on the human aspects of resource and environmental management, it will also highlight the importance of integrating ecological dimensions into management efforts.

PR: ENSU 2001

CR: GEOG 3425

3001 Application of Geographic Information Systems exposes students to the application of GIS in environmental and resource management through the use of real world, locally-relevant case studies. The topics cover spatial data acquisition, spatial data creation, spatial data interpolation, and simulation of the distribution of flow of mass, energy, goods, services, animals and people in a spatially-explicit manner. In addition to laboratory assignments, students will complete a major term project.

CR: the former EVST 3001; GEOG 3260

PR: ENSU 2000

LH: 3

3100 Environmental Planning and Management has two simultaneous and complementary dimensions: planning and management. The “environment” in environmental planning and management plays out in two ways: inappropriate consumption, and appropriate site accommodation. In this course, we consider the broad context of environmental problems while focusing the planning toolkit on principles of sustainability. The course starts with a history of environmental contexts in North America, and then moves to the specifics of context. Case studies are widely employed.

CR: the former SRMG 3001

PR: ENSU 2001

3101 Analytical Approaches to Resource Management provides training in application of modelling approaches for entities ranging from single populations to interacting systems. These approaches will be used to understand population and ecosystem dynamics as well as harvester and market behaviour under various management scenarios.

PR: ENSU 2001, BIOL 2600, GEOG 3222 or 3 credit hours in statistics

LH: 3

4000 Integrated Approaches to Resource Management and Decision Analysis exposes students to approaches from natural and social sciences for natural resource management and decision making. Natural resource management involves decision making in a complex array of biophysical, social and economic environments consisting of the allocation of resources, formulation of policies, and manipulations of natural systems. The course presents methodological and practical

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aspects of planning and management using a case-based approach with regional, national and international perspectives.

PR: ENSU 3000 or permission of the program chair

4010 Seminar in Environment and Sustainability is a senior seminar in which selected environmental issues will be examined from several disciplinary perspectives.

CR: the former EVST 4010 and the former SRMG 4010

PR: ENSU 3000 or permission of program chair

4100 Remote Sensing discusses the physical principles on which remote sensing is based and the types of measurements being made.

Understanding how remote sensors work at the conceptual level is the key to understanding the type of information that can be obtained. The topics covered include collection, manipulation and processing of remotely-sensed data, and the applications of these data in environmental and resource management.

CR: GEOG 3250, the former SRMG 4000

PR: ENSU 3001

LH: 3

4200 Contemporary Issues in Environmental Studies provides a detailed, comprehensive investigation of selected environmental problems that could include the following issues: risk assessment, indigenous peoples' perspectives on the environment, energy policy, water governance, parks planning & management, political ecology, natural resource policy and administration, and environmental justice.

PR: ENSU 3000

4201 Environmental Assessment provides a thorough consideration of the environmental effects of a project and takes into account potential and probable impacts on the environment as well as people. Other areas of emphasis include cumulative impacts, socio-economic impacts, sustainability assessments, and Strategic Environmental Assessments of policies, plans, and programs.

PR: 60 credit hours completed

CR: the former EVST 4000

4901-4910 Special Topics in Environment and Sustainability: topics to be announced.

PR Enrollment in 3rd or 4th year of the Bachelor of Environment and Sustainability Degree program

4950 Independent Research Project – Environmental Studies is a course that requires students to conduct independent research in

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environmental studies under the supervision of a faculty member. Students will prepare a major paper based upon their independent research.

PR: ENSU 3000, GEOG 3222, SOCI 3040

CR: the former EVST 4950

4960 Independent Research Project – Resource Management is a course that requires students to conduct independent research in resource management under the supervision of a faculty member. Students will prepare a major paper based upon their independent research.

PR: ENSU 3000, ENSU 3101, GEOG 3222

CR: the former SRMG 4950

Page 230, 2017-2018 Calendar, under the heading 13.13 Environmental Studies, amend the section as follows and renumber accordingly:

~~13.13 Environmental Studies~~

~~Environmental Studies courses are designated by EVST.~~

~~**1000 An Introduction to Environmental Studies** is an interdisciplinary introduction to the study of the environment that aims to develop environmental literacy. This course brings together perspectives from the natural sciences and the social sciences to examine such issues as global warming, air pollution, sustainability, new energy technologies, and environmental law.~~

~~**2000 Introduction to Mapping, Remote Sensing, and Geographical Information Systems** is an introduction to maps, global positioning systems, remote sensing, and geographic information systems. Applications to a broad range of environmental issues will be discussed.~~

~~CR: Geography 2195~~

~~LH: 3~~

~~PR: Geography 1050 or Earth Sciences 1002~~

~~**2210 Outdoor Environmental Pursuits I** is the theoretical rationale and practical skills needed to demonstrate basic proficiency in several of the following activities: minimal impact camping, wilderness cooking, hiking, kayaking, canoeing, navigating with map and compass, outdoor safety, search and rescue, and group management. The major focus of this course will be the practical application of learned skills.~~

~~AR: attendance is required~~

~~CO: basic first aid and CPR course OR: 3~~

~~hours of practicum per week~~

~~UL: cannot be used as an elective towards the **Environmental Studies**~~

~~**Major for Graduates of the Two-Year Adventure Tourism Diploma Program**~~

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~~2220 Outdoor Environmental Pursuits II~~ is the theoretical rationale and practical skills needed to demonstrate basic proficiency in several of the following activities: cross country skiing, telemark skiing, downhill skiing, snowshoeing, winter camping, and winter survival techniques. The major focus of this course will be the practical application of learned skills.

AR: attendance is required

OR: 3 hours of practicum per week

UL: cannot be used as an elective towards the **Environmental Studies Major for Graduates of the Two-Year Adventure Tourism Diploma Program**

~~3000 Issues in Environmental Economics~~ is an analysis of current issues concerning the effects of the economic activities of production and consumption on the natural environment. The concepts of scarcity, abundance, demand, supply, opportunity cost, trade-offs, externalities, marginal benefits and marginal costs will be utilized in examining environmental problems. The social and economic implications of various approaches will also be analysed.

OR: Economics 2010

~~3001 Environmental and Resource Management: Applications of Geographic Information Systems~~ is applied GIS knowledge and skills in environmental and resource management. The topics cover GIS data sources, data conversions, database design, spatial analysis and decision support systems. Examples of GIS applications in the private and public sectors will be provided.

LH: 3

PR: EVST 2000

~~3085 Issues in Ecological Economics~~ (same as Economics 3085) explores the dynamic interaction between the economic system and the ecological system that sustains it by using trans disciplinary theoretical approaches and methodologies. The main focus of this course will be on Ecological Economics concepts such as low and high entropy, biotic and abiotic goods and services, stock flow resources, carrying capacity, throughput, co-evolution, sustainable scale, use value, and their applications in a problem solving context.

CR: Economics 3085

PR: Economics 2010

~~3210 Expedition~~ will consist of one or more extensive expeditions into wilderness areas. A variety of applied topics related to environmental issues, outdoor leadership, and outdoor survival will be covered using an experiential approach. Expedition: Two weeks (Summer term).

School of Science and the Environment (cont'd)

AR: attendance is required

PR: EVST 2210 and EVST 2220

UL: cannot be used as an elective towards the **Environmental Studies Major for Graduates of the Two-Year Adventure Tourism Diploma Program**

~~4000 Environmental Impact Assessment~~ will include an analysis of the different methods of assessing the impacts that investment projects or decision-making processes have on the environment. Environmental Impact Assessments (EIAs) vary with individual projects and are a vital tool to use in integrated planning of development proposals, policies and programs. Emphasis will be given to assessing the socio-economic impact of development projects.

~~4010 Seminar in Environmental Studies~~ is a senior seminar in which selected environmental issues will be examined from several disciplinary perspectives.

OR: seminars three hours per week

PR: permission of the Environmental Studies Program Chair

~~4020-4039 Special Topics in Environmental Studies~~ has a range of special topics in Environmental Studies. This course is normally taken by students beyond the second year.

~~4950 Independent Research Project~~ is a course, under the supervision of a faculty member, where each student will carry out an approved project in environmental studies and prepare a major paper based on independent research.

PR: permission of the Environmental Studies Program Chair

Page 242, 2017-2018 Calendar, under the heading 13.30 Sustainable Resource Management, amend the section as follows and renumber accordingly:

13.30 Sustainable Resource Management

Sustainable Resource Management courses are designated by SRMG.

~~2000 Sustainable Resource Management I: Marine and Terrestrial Environments~~ is an introduction to the interdisciplinary field of sustainable resource management, including marine and terrestrial environments. The course focuses on sustainable practices rather than profit or resource extraction optimization. First Nations' perspectives will also be considered.

PR: Geography 1050 or the former Geography 1000

School of Science and the Environment (cont'd)

~~**2001 Sustainable Resource Management II: Industry-Specific Approaches** develops the topics presented in Sustainable Resource Management 2000 with reference to specific industries such as the fishery, forests, mining, oil and gas, soils, and water. This course traces the importance of resources in their historical context both locally and globally.~~

~~PR: SRMG 2000~~

~~**3000 Regional Planning and Management** is an introduction to the concepts and processes of regional planning, development, and management. The course addresses planning history and dominant historical contributions to regional, urban, and rural morphology. Planning theory, planning practice, and management strategies are studied.~~

~~PR: SRMG 2000 and SRMG 2001~~

~~**3001 Environmental Planning and Management** focuses on balancing economic growth and environmental objectives. Environmental risk analysis, environmental auditing, and First Nations' perspectives will also be studied.~~

~~PR: SRMG 3000~~

~~**3002 Biodiversity** focuses on the three dimensions of biodiversity (genetic diversity, species diversity, and ecosystem diversity) and their relationships. Biodiversity will be addressed from an interdisciplinary perspective as genes, species, and ecosystems are of economic and biological interest.~~

~~PR: Biology 1001, SRMG 2000, and SRMG 2001~~

~~**4000 Remote Sensing, Image Interpretation, and Resource Management** builds on topics introduced in Environmental Studies 2000 and Environmental Studies 3001. The course addresses the use of remotely sensed images to track the location, health, and variety of natural resources such as forests, crops, and migratory populations. The lab component of the course employs GIS, GPS, satellite imagery, and aerial photography to address research concerns such as oil spills, forest fire management, iceberg tracking, ocean temperature monitoring, mining exploration, and oil and gas development.~~

~~LH: 3~~

~~PR: Environmental Studies 2000 and Environmental Studies 3001~~

~~**4001 Renewable and Non-Renewable Energy Resources** presents an interdisciplinary approach to renewable and non-renewable energy resources and their management. The course examines the existing industrial economy's dependence on fossil fuels and studies~~

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~~renewable energy resources such as wind, solar, and geothermal.
PR: SRMG 2000~~

~~**4002 Risk Assessment and Management** is an introduction to risk assessment and management as interdisciplinary processes.
PR: Environmental Studies 4000~~

~~**4003 Environmental Law** is an introduction to laws protecting the environment in Canada and elsewhere. The course examines environmental rules and activities through the study of legal precedents and contexts. Laws and policies of the federal, provincial, and local levels of government (including those pertaining to First Nations) are addressed insofar as they affect the environment. Case studies are employed. PR: Environmental Studies 1000~~

~~**4010 Research Seminar in Sustainable Resource Management** is the senior seminar in which selected sustainable resource management topics are examined from an interdisciplinary perspective. The seminars are presented on current research and environmental issues by faculty, students, and guest speakers from universities, government, and industry.
PR: Enrolment in the final year of the Sustainable Resource Management program or permission of the Program Chair.~~

~~**4901-4910 Special Topics in Sustainable Resource Management** will have topics to be studied announced.
PR: SRMG 2000 and SRMG 2001~~

~~**4950 Independent Research Project** requires that students carry out an approved project on a topic in Sustainable Resource Management and prepare a major paper under the supervision of a faculty member. Students will undertake both a systematic literature review and independent research.
PR: Permission of the Sustainable Resource Management Chair~~

55. REMARKS FROM THE CHAIR/BUDGET - QUESTIONS/
COMMENTS FROM SENATORS

The President invited Mr. Kent Decker, Vice-President (Administration and Finance), and Dr. Noreen Golfman, Provost and Vice-President (Academic), to give an update on the Budget.

Mr. Decker and Dr. Golfman gave a slide presentation on the Budget and then the floor was then opened up and Mr. Decker, Dr. Golfman, and the President responded to questions and comments from Senators.

Remarks from the Chair/Budget - Question/Comments from Senators
(cont'd)

The President wished everyone a wonderful Holiday season.

The President acknowledged that this would be Jennifer Porter's last meeting as Secretary of Senate and thanked her with a round of applause. In the new year, Tom Nault, the new University Registrar, will be taking over as Secretary of Senate and welcomed him with a round of applause.

56. ADJOURNMENT

The meeting adjourned at 4:45 p.m.

CHAIRMAN

SECRETARY