THE UNIVERSITY OF BRITISH COLUMBIA

Enrolment Services
Senate and Curriculum Services
1874 – 2016 East Mall
Vancouver, BC
V6T 1Z1

4 May 2006

To: Senate
From: Senate Curriculum Committee

Re: **MAY CURRICULUM PROPOSALS**

The Senate Curriculum Committee has reviewed the material forwarded to it by the faculties, and encloses those proposals it deems as ready for approval.

As such, the following is recommended to Senate:

> *"That Senate approves the new and changed undergraduate and graduate courses and programs brought forward by the Faculties of Applied Science, Arts, Commerce & Business Administration, Forestry, Graduate Studies, Law, and Science; and the new undergraduate courses from the College of Health Disciplines as set out in the attached packages."*

The Committee does note that the proposal for the "Mathematics Minor" in the Faculty of Applied Science that Senate approved in April with the proviso that the Committee would reconsider the proposal name is returned in this package. The Committee is proposing to amend its name to "Minor in Honours Mathematics."

Finally, on the Senate website at http://students.ubc.ca/senate/schedule.cfm is the second set of reformatted Graduate Programs (under materials for the May 2006 Senate).. As Senate will recall, late last year the first set of these statements were approved by Senate. This exercise is being conduced to provide uniform and consistent representation of all Faculty of Graduate Studies graduate program requirements in the calendar. A third and final set of programs will be brought to Senate for consideration this fall. As such, the following is recommended to Senate:

> *"That Senate approves the Graduate Program statements (Adult Learning & Global Change through Women's & Gender Studies; list not inclusive alphabetically)"*

THE UNIVERSITY OF BRITISH COLUMBIA

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Senate and Curriculum Services
1874 – 2016 East Mall
Vancouver, BC
V6T 1Z1

4 May2006

To: Senate
From: Senate Curriculum Committee

Re: **Faculty of Applied Science Curriculum Report**

The following proposals are for your consideration:

1) A new **Minor in Honours Mathematics** to replace the **Mathematics Minor** which replaced the **Honours Mathematics Option** in the **Bachelor of Applied Science** program.

UNDERGRADUATE CATEGORY 1 REPORT

APPLIED SCIENCE	
APPLIED SCIENCE	**Undergraduate Program Change**
Effective Date: September 2006. *This entry will follow the Minor in Commerce entry students.ubc.ca/calendar/index.cfm?tree=12,195,272,62 and precede the Minor in Information Technology entry students.ubc.ca/calendar/index.cfm?tree=12,195,272,46* **MINOR IN HONOURS MATHEMATICS** Students wanting a stronger foundation in mathematics are encouraged to consider the Minor in Honours Mathematics. Upon successful completion of this minor program, the notation "Minor in Honours Mathematics" will be placed on the student's transcript. The Minor in Honours Mathematics consists of two components, 200-level MATH courses and 300- and 400-level MATH courses. A minimum of 9 credits of 200-level MATH courses is required in the first component. • 200-level MATH courses from a student's engineering program (excluding MATH 221 and 223) may be included in this total. • Students must include at least one of MATH 217, 227, 263 or 317 (Students having successfully completed MECH 222 are exempt from this requirement). • Additional eligible courses are MATH 220, 257 and eligible elective 300- and 400-level MATH courses listed in the second component. The 300- and 400-level MATH courses required by the Minor in Honours Mathematics are: MATH 300 — 3 MATH 320[1] — 3 Two of MATH 301, 321, 322 and 400 — 6 Elective 300 and 400-level MATH courses[2] — 12 [1]The prerequisites for MATH 320 will be waived for students who earn an overall average of at least 80% on the best 5 or more credits of 200-level MATH courses from the first component. Other students must obtain at least 80% in MATH 220. [2]Eligible elective 300- and 400-level MATH courses are: MATH 301, 257/316, 317, 318, 321, 322, 331, 345, 400-405, 412, 416-440, 443 and 449. An overall average of at least 68% must be obtained in each of the two components of the Minor in Honours Mathematics	*There is currently no entry in the Calendar. The individual program "Honours Mathematics Option" entries in Electrical and Computer Engineering, Engineering Physics, and Mechanical Engineering will be deleted.* **Action:** Replace "Mathematics Minor" with "Minor in Honours Mathematics" **Rationale:** The individual "Honours Mathematics Option" entries in Electrical and Computer Engineering, Engineering Physics and Mechanical Engineering will be replaced by a Faculty-wide minor. This change will provide uniformity across all Honours Mathematics options within the Faculty, will ease advising within the Mathematics department and provide access to the Minor in Honours Mathematics to students in all engineering programs. **Document ID#:** APSC UG001

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Vancouver, BC
V6T 1Z1

4 May 2006

To: Senate
From: Senate Curriculum Committee

Re: **FACULTY OF ARTS CURRICULUM REPORT**

Attached please find the following undergraduate proposal for your consideration:

1) The following new program:
    a. Bachelor of **Arts** in **Computer Science**

UBC Curriculum Proposal Form
Change to Course or Program

Category: (1)

Faculty: ARTS **Department: Dean's Office** **Faculty Approval Date:** **Effective Session _06W__ Term __1_ Year__2006_ for Change**	**Date: 1 February 2006** **Contact Person: Dr. Neil Guppy** **Phone: 2-6701** **Email: guppy@mail.arts.ubc.ca**
Proposed Calendar Entry: **COMPUTER SCIENCE** The **Department of Computer Science** offers opportunities for study leading to a bachelor's degree in Arts. For information on graduate degrees, see ***Computer Science*** in the Faculty of Graduate Studies section. The Department of Computer Science accepts applications year-round from current UBC Arts students for entry into the Major. Admission to the program must be approved by the Department. Arts students who are eligible to declare a specialization should apply to the Department of Computer Science for admission into the program. Eligibility to declare a specialization requires completion of at least 54 credits and not more than 75 credits. For application forms and further information regarding admission and continuation requirements, students are advised to review the **Department of Computer Science undergraduate website**. MAJOR IN COMPUTER SCIENCE Students in Arts majoring in Computer Science are reminded that they will still need to satisfy all the Faculty of Arts **Degree Requirements** (i.e., English language, literature, other language, and science) plus complete at least 18 additional credits in Arts courses as set out below. FIRST YEAR • CPSC 111 and 121 • MATH 100 or 102 or 104 (or 180 or 184 or 120) • MATH 101 or 103 or 105 (or 121)	**URL: NONE** **Present Calendar Entry: NONE** **Type of Action: New Program** **Rationale:** There are a number of students in many Arts programs that would like to complete a Computer Science degree, but they are discouraged by the first year requirement in Physics, Chemistry, and Biology. This program will be very suitable for these students, Music, Fine Arts, and Theatre are good examples of programs that have students with such desire and potential. This program encourages closer collaboration between the Faculties of Arts and Science which may trigger new initiatives related to new curricula and research involving the two faculties. There are course initiatives already in progress in the area of Theatre, Music, and the Visual Arts. The program fits well with UBC's Trek 2010 document in terms of promoting innovation, closer contact among disciplines, and better opportunities for students.

SECOND YEAR ● CPSC 211, 213, and 221 ● Six credits from MATH 200, 221, STAT 200, 241 ● at least six elective credits in Arts courses THIRD AND FOURTH YEARS ● at least twelve elective credits in Arts courses numbered 300 or above ● CPSC 310, 313, 320 ● Twelve credits CPSC courses numbered 300 or above ● Nine credits CPSC courses numbered 400 or above	

T H E U N I V E R S I T Y O F B R I T I S H C O L U M B I A

Enrolment Services
Senate and Curriculum Services
1874 – 2016 East Mall
Vancouver, BC
V6T 1Z1

4 May 2006

To: Senate
From: Senate Curriculum Committee

Re: **FACULTY OF FORESTRY CURRICULUM REPORT**

Attached please find the following undergraduate proposal for your consideration:

1) The following new course:
    a. **CONS 495** (3) Principles of Managing Problem Wildlife in Forests and Agricultural Environments.

UBC Curriculum Proposal Form

Change to Courses
Category: 1

Faculty: Forestry **Department:** Forest Resources Management / Forest Science **Faculty Approval Date:** March 7, 2006 **Effective Session:** Term 2, 06W **Year:** 2006	**Date: March 7, 2006** **Contact Person: Peter Marshall** **Phone: (604) 822-4918** **Email: Peter.Marshall@ubc.ca**
Proposed Calendar Entry: **CONS 495 (3) Principles of Managing Problem Wildlife in Forests and Agricultural Environments.** Impacts of wildlife on crop productivity in temperate and tropical environments, the resiliency of wildlife populations to conventional control methodology, adoption of innovative methods to reduce crop damage, and the impact of introduced species on native fauna. [2-0-1] Same as AGRO 495.	**URL:** **Present Calendar Entry:** None **Type of Action:** New course. **Rationale:** A similar course was offered a number of years ago, but was discontinued when the professor offering the course left the university. We again have the expertise to offer this course. It is being offered as a directed studies course this academic year and has several students from each of the Faculties of Forestry and Land and Food Systems attending, despite limited promotion. Land and Food Systems will be supporting a similar proposal for the creation of AGRO 495. **Documentation:** FRST_Spring_2006_1

THE UNIVERSITY OF BRITISH COLUMBIA

Enrolment Services
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V6T 1Z1

4 May 2006

To: Senate
From: Senate Curriculum Committee

Re: **GRADUATE STUDIES CURRICULUM REPORT**

Attached please find the following graduate proposals for your consideration:

Applied Science – School of Nursing

1) The following new courses:
    a. **NURS 506** (3) Health Promotion in Practice
    b. **NURS 509** (2) Clinical Procedures in Primary Care Settings
    c. **NURS 570** (6) Primary Care I
    d. **NURS 571** (6) Primary Care II
    e. **NURS 572** (6) Primary Care III
    f. **NURS 591** (3) Professional and Ethical Issues in NP Practice

Arts

2) The following new courses:
    a. **PSYC 584** (3/6) d Language Development in Infancy and Childhood
    b. **PSYC 589** (3/6) d Moral Development

Graduate Studies

3) The following changed courses:
    a. **CICS 510** (3) Theoretical Foundations of Computer Science
    b. **CICS 515** (3) Computer Networks and Internet Programming

4) The following new courses:
    a. **CICS 518** (3) Computer and Information System Security
    b. **CICS 530** (3) Advanced Software Engineering Project

Commerce & Business Administration (Programs Located in Disciplinary Faculty)

5) The following new sub-specialization in the **Master of Business Administration** program:
    a. Business Intelligence Systems

Science

6) The following new courses:
    a. **CPSC 550** (3) Machine Learning II
    b. **EOSC 514** (3) Introduction to Geological Fluid Mechanics
    c. **EOSC 547** (3) Tunneling and Underground Engineering
    d. **EOSC 575** (3) The Biology and Ecology of Marine Zooplanktonic Organisms
    e. **EOSC 584** (2-6) dTopics in Biological Oceanography
    f. **EOSC 585** (2-6) d Topics in Physical Oceanography

7) The following changed course:
    a. **PHYS 533** (3) Laser Physics

8) A further set of generally reformatted **Graduate Programs**

UBC Curriculum Proposal Form
Change to Course or Program

GRADUATE COURSES AND PROGRAMS

Applied Science
Category: 1

Faculty: Graduate Studies **Department: Nursing** **Faculty Approval Date: October18/05** **Effective Session __W__ Term _1__ Year_2006__ for Change**	**Date: February 13, 2006** **Contact Person: Carol Jillings** **Phone: 2-7479** **Email: jillings@nursing.ubc.ca**
Proposed Calendar Entry: Nursing 506 (3) Health Promotion in Practice	**Type of Action: new course** **Rationale:** This is a new course in the Nurse Practitioner program. It expands upon content previously covered in other NP courses to allow greater emphasis on principles and practices of health promotion in primary care.
Faculty: Graduate Studies **Department: Nursing** **Faculty Approval Date: October 18/05** **Effective Session _W___ Term _1__ Year 2006___ for Change**	**Date: February 13, 2006** **Contact Person: Carol Jillings** **Phone: 2-7479** **Email: jillings@nursing.ubc.ca**
Proposed Calendar Entry: Nursing 509 (2) Clinical Procedures in Primary Care Settings	**Type of Action: new course** **Rationale:** This course focuses on key office procedures in Nurse Practitioner practice. Content was formerly covered in Primary Care courses, but requires greater emphasis.

Faculty: Graduate Studies **Department: Nursing** **Faculty Approval Date: October 18/05** **Effective Session __W__ Term 1___** **Year_2006__ for Change**	**Date: February 14, 2006** **Contact Person: Carol Jillings** **Phone: 2-7479** **Email: jillings@nursing.ubc.ca**
Proposed Calendar Entry: Nursing 570 (6) Primary Care I	**Present Calendar Entry:** Nursing 577 (3-6)D Graduate Practicum in Nursing **Type of Action:** New Course **Rationale:** The NP practicum requires its own number designation and fixed credit value in order to distinguish it from practica in the mainstream MSN program.
Faculty: Graduate Studies **Department: Nursing** **Faculty Approval Date: October 18/05** **Effective Session __W__ Term _1__** **Year_2006__ for Change**	**Date: February 14, 2006** **Contact Person: Carol Jillings** **Phone: 2-7479** **Email: jillings@nursing.ubc.ca**
Proposed Calendar Entry: Nursing 571 (6) Primary Care II	**Present Calendar Entry:** Nursing 577 (3-6)D Graduate Practicum in Nursing **Type of Action:** New Course **Rationale:** The NP practicum requires its own number designation and fixed credit value in order to distinguish it from practica in the mainstream MSN program.
Faculty: Graduate Studies **Department: Nursing** **Faculty Approval Date: October 18/05** **Effective Session __W__ Term __1_** **Year_2006__ for Change**	**Date: February 14, 2006** **Contact Person: Carol Jillings** **Phone: 2-7479** **Email: jillings@nursing.ubc.ca**
Proposed Calendar Entry:	**Present Calendar Entry:**

Nursing 572 (6) Primary Care III	Nursing 577 (3-6)D Graduate Practicum in Nursing **Type of Action:** New Course **Rationale:** The NP practicum requires its own number designation and fixed credit value in order to distinguish it from practica in the mainstream MSN program.
Faculty: Graduate Studies **Department: Nursing** **Faculty Approval Date: October 18/05** **Effective Session _W___ Term __1_ Year_2006__ for Change**	**Date: February 13, 2006** **Contact Person: Carol Jillings** **Phone: 2-7479** **Email: jillings@nursing.ubc.ca**
Proposed Calendar Entry: Nursing 591 (3) Professional and Ethical Issues in NP Practice	**Type of Action: new course** **Rationale:** This course has been implemented as a focused directed studies course addressing content on regulatory parameters of NP practice, health system issues and ethical aspects of primary care. It now requires its own number and title to distinguish it from more generic directed studies courses taken by mainstream MSN students.

Arts

Faculty: Arts **Department: Psychology** **Faculty Approval Date:** **Effective Session: Winter; Term: 1; Year for Change: 2006**	**Date: September, 2005** **Contact Person: Tannis MacBeth** **Phone: 822-4826** **Email: tmacbth@psych.ubc.ca**
Proposed Calendar Entry: PSYC 584 (3/6) d **Language Development in Infancy and Childhood**	**Present Calendar Entry:** N/A **Type of Action:** New course **Rationale:** The content of PSYC 584 would focus on language development in

	infancy and childhood. There is currently no graduate course in the Psychology Department's curriculum devoted to this topic, though several faculty members are experts in the area. This content is currently taught under other course numbers, including PSYC 513 (Special Topics in Developmental Psychology) and PSYC 521 (Psycholinguistics), but it would be more informative to have a title reflecting the course content. **ID Number for Supporting Documents**: PSYC 584-NEW

Faculty: Arts **Department: Psychology** **Faculty Approval Date:** **Effective Session: Winter; Term 1;** **Year for Change: 2006**	**Date: September, 2005** **Contact Person: Tannis MacBeth** **Phone: 822-4826** **Email: tmacbeth@psych.ubc.ca**
Proposed Calendar Entry: PSYC 589 (3/6) d **Moral Development**	**Present Calendar Entry:** N/A **Type of Action:** New course **Rationale:** The content of PSYC 589 would focus on moral development. There is currently no graduate course in the Psychology Department's curriculum devoted to this topic, though we have faculty expertise in the area. This content is currently taught under other course numbers, including PSYC 586 (Developmental Psychology I), but it would be more informative to have a title reflecting the course content. **ID Number for Supporting Documents**: PSYC 589-NEW

Graduate Studies

Faculty: Graduate Studies **Department:** I.C.I.C.S. – Master of Software Systems **Faculty Approval Date: April 28, 2006** **Effective Session** _06W___ **Term** __2_ **Year**_06W__ **for Change**	**Date:** February 20, 2006 **Contact Person:** P. Nasiopoulos **Phone:** 2-2646 **Email:** panos@ece.ubc.ca
Proposed Calendar Entry: CICS 510(3) Theoretical Foundations of Computer Science Models and analysis of software systems; discrete mathematics; algorithm analysis and complexity.	**URL:** http://students.ubc.ca/calendar/courses.cfm?code=CICS **Present Calendar Entry:** CICS 510(6) Models and Analysis of Software Systems In depth study of selected models and analysis of software systems: software testing and its models; discrete mathematics; algorithm analysis and complexity. **Page 485 Col. 2** **Type of Action:** Change title and partly the description. Reduction to 3 credits. **Rationale:** Change the title and description to reflect the current changes in the market. This course is reduced to 3 credits. The emphasis is on theoretical foundations of Computer Science. The other 3 credits will be replaced by another course on computer security (CICS 518).

Faculty: Graduate Studies **Department**: I.C.I.C.S. – Master of Software Systems **Faculty Approval Date: Aprl 28, 2006** **Effective Session** _06S___ **Term** _1__ **Year**_06S__ **for Change**	**Date:** February 20, 2006 **Contact Person:** P. Nasiopoulos **Phone:** 2-2646 **Email:** panos@ece.ubc.ca
Proposed Calendar Entry: CICS 515(3) Computer Networks and Internet Programming The architecture of computer networks, design, protocols, with emphasis on local area networks. Principles of internet and WWW programming. Prerequisites: All of CICS 505, CICS 510 and CICS 520.	**URL:** http://students.ubc.ca/calendar/courses.cfm?code=CICS **Present Calendar Entry:** CICS 515(3) Computer and Network Architecture The architecture of computer and network systems: hardware architectures; machine language; network architectures; communication protocols. Prerequisite: All of CICS 505, CICS 510. **Page: 485 Col. 2** **Type of Action:** Change to title and partly the description. **Rationale:** Change the title and description to reflect the current changes in the market. Presently our program does not address software development in the www environment which is a rapidly growing technology. For this reason the low level hardware part of the course is replaced with internet programming.

Faculty: Graduate Studies **Department**: I.C.I.C.S. – Master of Software Systems **Faculty Approval Date: April 28, 2006** **Effective Session** _06S___ **Term** __1_ **Year**_06S__ **for Change**	**Date:** February 20, 2006 **Contact Person:** P. Nasiopoulos **Phone:** 2-2646 **Email:** panos@ece.ubc.ca
Proposed Calendar Entry: CICS 518(3) Computer and Information System Security Technical, operational, and managerial issues of computer system security, computer security threats, techniques for detecting and preventing security violations, instituting safeguards, and applying appropriate level of security for the perceived risk. Prerequisites: CICS 505, CICS 510 and CICS 520.	**URL:** http://students.ubc.ca/calendar/courses.cfm?code=CICS **Present Calendar Entry:** New **Type of Action:** New Course **Rationale:** Computer security is a very important topic for software systems, which is missing from the present curriculum. This course replaces 3 credits of CICS 510.

Faculty: Graduate Studies **Department**: I.C.I.C.S. – Master of Software Systems **Faculty Approval Date: April 28, 2006** **Effective Session** _06W___ **Term** _2__ **Year**_06W__ **for Change**	**Date:** February 20, 2006 **Contact Person:** P. Nasiopoulos **Phone:** 2-2646 **Email:** panos@ece.ubc.ca
Proposed Calendar Entry: CICS 530(3) Advanced Software Engineering Project Design implementation and test of a large software system in an operational environment with emphasis on a team approach. Prerequisites: CICS 505, 510, 515, 518, 520, 525.	**URL:** http://students.ubc.ca/calendar/courses.cfm?code=CICS **Present Calendar Entry:** **Type of Action:** New Course **Rationale:** A graduate level capstone course that allows students to use the knowledge acquired in previous courses and develop an advanced project in software engineering. Surveys with past graduates and co-op employers show the high demand for such a course.

Commerce & Business Administration

Faculty: Commerce **Department: NA** **Faculty Approval Date: Nov 17, 05** **Effective Session ____ Term _2__ Year_05/06__ for Change**	**Date: November, 17** **Contact Person: Dale Griffin** **Phone: 2-0156** **Email: dale.griffin@sauder.ubc.ca**
Proposed Calendar Entry:	**URL:** **Present Calendar Entry:** None. Subspecializations are not listed in the Calendar, but are listed on students' transcripts. **Type of Action:** Add Business Intelligence Systems Sub-

	Specialization to MBA program. Delete E-Business Sub-Specialization. **Rationale:** Introduction of a "Business Intelligence Systems Sub-Specialization" in the MBA program. This is consistent with existing sub-specializations that require the completion of 3 MBA modules in one area. This is being introduced in response to student interest in this area. See Attached

Science

COMPUTER SCIENCE	
Effective Date for Change: 06W **Proposed Calendar Entry:** **CPSC 550 (3) Machine Learning II.**	**Present Calendar Entry:** None. **Action:** New course. **Rationale:** In 2001, we introduced CPSC 540, an introductory graduate class in machine learning. This has proved to be very popular, with the number of registered students often in the 25-30 range. However, we have found that one semester is barely enough time to cover the basics, and leaves no time to cover any of the advanced topics on the current research frontier. We therefore propose to make a second-semester machine learning courses to prepare students to do research into his field. A trial-run of this course was offered in Fall 2004, as CPSC 532c (Topics in AI), and was very popular (27 students). **Supporting Documents: SCI-05-2-CPSC 550**

EARTH AND OCEAN SCIENCES	
Effective Date for Change: 06W **Proposed Calendar Entry:** **EOSC 514 (3) Introduction to Geological Fluid Mechanics.**	**Present Calendar Entry:** None. **Action:** New course. **Rationale:** Many problems in the Earth and planetary sciences involve fluid flow. A new hire in this field allows us to strengthen our fluid dynamics offerings. This course presents an introduction to fluid mechanics and will investigate the role of fluid

	mechanics in diverse geological, geodynamic and environmental processes on the Earth and other planets. Specific topics will vary from year to year, according to the interests of the students and the instructor. This course complements and expands the scope of existing fluid mechanics courses in EOSC, MATH, CHBE, CIVL and MECH by introducing fluid dynamics in geological problems including fluids with the huge variations in viscosity and rheology. **Supporting Documents: SCI-05-2-EOSC 514**
Effective Date for Change: 06W **Proposed Calendar Entry:** **EOSC 547 (3) Tunneling and Underground Engineering.**	**Present Calendar Entry:** None. **Action:** New course. **Rationale:** A recent hire in the field allows us to add this course and thereby strengthen the Geological/Geotechnical Engineering graduate offerings. It will also address interests of colleagues in Civil and Mining Engineering with similar programs involving geotechnical engineering, as well as those of local industry given the increase in tunneling activity in the Pacific Northwest. It has been successfully taught as a directed studies course with 6 students from Geology or Mining registered. **Supporting Documents: SCI-05-2-EOSC 547**

Effective Date for Change: 06W **Proposed Calendar Entry:** **EOSC 575 (3) The Biology and Ecology of Marine Zooplanktonic Organisms.**	**Present Calendar Entry:** EOSC 575 ~~(2) Biological Oceanographie Mechanisms.~~ ~~A study of …..marine organisms.~~ ~~Prerequisite: EOSC 370.~~ **Action:** Replace EOSC 575 with new course. **Rationale:** This course is designed to provide a comprehensive overview of one of the critical functional groups of marine plankton linking photosynthetically fixed organic matter and marine top predators, including harvestable fish stocks and marine mammals. It will be suitable for all incoming graduate students in EOS (i.e., physical, chemical, biological, and fisheries oceanography) and could be of considerable interest for students in other departments at UBC, including Zoology and Fishery graduate students. It is anticipated that this course will provide useful perspective on marine

	zooplankton to these students irrespective whether they focus their degree on biological, conservational or biogeochemical cycle aspects. Previous version of EOSC 575 was never taught (after number was switched from OCGY). **Supporting Documents: SCI-05-2-EOSC 575**
Effective Date for Change: 06W **Proposed Calendar Entry:** **EOSC 584 (2-6) D Topics in Biological Oceanography.**	**Present Calendar Entry:** None. **Action:** New course. **Rationale:** We wish to introduce a topics course to allow a variety of courses to be taught as the opportunity arises. We have hired a number of new faculty members in this field who wish to give a variety of new courses. We have had on occasion an Adjunct Faculty member or a Visiting Faculty member available to teach a graduate course. **Supporting Documents: SCI-05-2-EOSC 584**
Effective Date for Change: 06W **Proposed Calendar Entry:** **EOSC 585 (2-6) D Topics in Physical Oceanography.**	**Present Calendar Entry:** None. **Action:** New course. **Rationale:** We wish to introduce a topics course to allow a variety of courses to be taught as the opportunity arises. Currently such organized classroom type courses have been given as Directed Studies, which is not descriptive enough on the students' transcripts. **Supporting Documents: SCI-05-2-EOSC 585**

PHYSICS AND ASTRONOMY	
Effective Date for Change: 06W **Proposed Calendar Entry:** **PHYS 533 (3) Laser Physics.** **Classical and semi-classical treatment of interaction of EM-radiation with atomic systems; semi-classical laser theory; Gaussian beams and optical resonators; specific laser types and systems; femtosecond lasers and amplifiers; Raman lasers; lasing with inversion; topics of current research interest.**	**Current Calendar Entry** PHYS 533 (~~2~~) LASER PHYSICS ~~Interaction of EM-radiation with matter, Gaussian beams and optical resonators, laser oscillators, specific laser systems, amplification in laser media, the electro-optic effect.~~ **Action:** Change credits from 2 to 3. Change description. **Rationale:** New faculty members have recently been hired and would like to reorganize and expand this course to include more modern topics. Advanced level knowledge of electromagnetism and optics is required.

Enrolment Services
Senate and Curriculum Services
1874 – 2016 East Mall
Vancouver, BC
V6T 1Z1

4 May 2006

To: Senate
From: Senate Curriculum Committee

Re: **FACULTY OF LAND & FOOD SYSTEMS CURRICULUM REPORT**

Attached please find the following undergraduate proposals for your consideration:

1) The following new courses:
   a. **FNH 436** (3) Integrated Functional Genomics
   b. **FNH 439** (3) Laboratory in Integrated Functional Genomics
   c. **FNH 480** (3) Professional Dietetic Practice III
   d. **FNH 481** (3) Dietetic Internship I
   e. **FNH 482** (6) Dietetic Internship II

THE UNIVERSITY OF BRITISH COLUMBIA

UBC Curriculum Proposal Form
Change to Courses
Category: 1

Faculty: Faculty of Land and Food Systems **Department:** **Faculty Approval Date:** 2006 **Effective Session:** Term 1, 06W **Year:** 2006	**Date: 2006** **Contact Person: David Shackleton** **Phone: (604) 822-4918** **Email: shac@interchange.ubc.ca**
Proposed Calendar Entry: AGRO 495 (3) PRINCIPLES OF MANAGING PROBLEM WILDLIFE IN FORESTS AND AGRICULTURAL ENVIRONMENTS. Impacts of wildlife on crop productivity; resiliency of wildlife populations to conventional control methodology; innovative methods to reduce crop damage; and impacts of introduced species on native fauna. [2-0-1] Same as CONS 495.	**Present Calendar Entry:** None **Type of Action:** New course. *Rationale:* A similar course was offered a number of years ago in Forestry, but was discontinued when the professor offering the course left the university. The same professor has returned to UBC and he offered the course as a directed studies course this academic year and has several students from each of the Faculties of Forestry and Land and Food Systems attending, despite limited promotion. Forestry will be supporting a similar proposal for the creation of CONS 495. **Documentation:** LFS – AGRO 495

UBC Curriculum Proposal Form
Change to Course or Program

Category: 1

<table>
<tr><td>Faculty: Land and Food Systems
Department: Food, Nutrition and Health
Effective Date for Change: 06W T1</td><td>Date: 3 April 06
Contact Person: Stephen Lund
Phone: 2-5708
Email: stlund@interchange.ubc.ca</td></tr>
<tr><td>Proposed Calendar Entry:

FNH 436 (3): INTEGRATED FUNCTIONAL GENOMICS
Global transcript, protein and metabolite profiling technologies, their integration, application, and furtherance of our understanding of how higher organisms function in general. Prerequisite: BIOL 335.
Equivalent: BIOL 436</td><td>Present Calendar Entry:
N/A

Action:
New Course

Rationale:
There is a need to help students learn the basics of functional genomics and to serve as an introduction help to potential graduate studies in this and related disciplines.

ID Number for supporting Documents:
BIOL/FNH 436
• Budgetary Impact form
• Library Consult
• Faculty consultations – Forestry; Medical Genetics, Pathology & Laboratory Medicine
Faculty Approval Date:
6 March 2006</td></tr>
<tr><td>Proposed Calendar Entry:

FNH 439 (3) LABORATORY IN INTEGRATED FUNCTIONAL GENOMICS
Current techniques and instrumentation in transcriptome analyses, proteome profiling, metabolite analysis, and bioinformatics. The concepts and skills learned will have broad applications to omics-based systems biology research in all eukaryotes. [0-0-3]
Prerequisite: BIOL 436 / FNH 436</td><td>Present Calendar Entry:
N/A

Action:
New Course

Rationale:
This course offers a unique experience for students to apply lecture-based knowledge from Biol 436/FNH 436 and physically access leading edge techniques and instrumentation to conduct functional genomics research first-hand. No such course currently exists at UBC – based on web-based searches conducted by Dr. Lund, course offerings of this content quality are currently rare at the undergraduate and even graduate levels at</td></tr>
</table>

	Canadian universities and abroad. This course will better position undergraduates to pursue graduate degrees in molecular biology and bioengineering fields, as well as to compete for graduate-level research grants later in their careers at UBC or elsewhere. **ID Number for supporting Documents:** FNH 439 **Faculty Approval Date:** 8 March 2006

UBC Curriculum Proposal Form
Change to Course or Program

Category: (1)

Faculty: Land and Food Systems **Department: Food, Nutrition and Health** **Faculty Approval Date:** 7 April 06 **Effective Session for Change: Varies by course (see below)**	**Date: March 14, 2006** **Contact Person: Karol Traviss** **Phone: 604-827-5046** **Email: karol.traviss@ubc.ca**
Proposed Calendar Entry: FNH 480 (3) PROFESSIONAL DIETETIC PRACTICE III. Themes include: practice-based research, clinical practice readiness, orientation to internship. Prerequisite: Fourth year standing in the Dietetics Major.[3-0-0] **Effective Session for Change:** S Term 1 Year 2006	**Type of Action:** New course **Rationale:** The UBC Dietetics Major has been revised to incorporate the professional practice and field work components necessary for students to graduate practice ready. This revision has necessitated development of new professional practice courses, which are being implemented with phase-in of the revised Major (FNH 381-May 05, FNH 480-May 06, FNH 481-Sept 06, and FNH 482-May 07). In our original program proposal, FNH 480 was to be a 9-credit course scheduled in May following 4th year. This did not offer the level of integration of theoretical and applied learning we were aiming for. To achieve this goal, we have developed two (3-credit) courses, FNH 381 (offered in May following 3rd year – launched in 2005) and FNH 480 (to be offered in May following 4th year – to be launched in 2006).
Proposed Calendar Entry: FNH 481 (18) DIETETIC INTERNSHIP I. Fulltime internship placements within British Columbia health authorities. Prerequisite: 5th year standing in the Dietetics Major. **Effective Session for Change:** W Term 1 Year 2006-2007	**Type of Action:** New course **Rationale:** FNH 481 and 482 are designed to address Dietitians of Canada dietetic internship accreditation standards. Note credit allocations for UBC health and human service training program practicum courses vary widely. The proposed number of credits for our internship courses is within the range of that offered by other programs.
Proposed Calendar Entry:	**Type of Action:** New course

FNH 482 (6) DIETETIC INTERNSHIP II. Fulltime internship placements within British Columbia health authorities. Prerequisite: FNH 481. **Effective Session for Change:** S Term 1 Year 2007	**Rationale:** As per FNH 481.

T H E U N I V E R S I T Y O F B R I T I S H C O L U M B I A

Enrolment Services
Senate and Curriculum Services
1874 – 2016 East Mall
Vancouver, BC
V6T 1Z1

4 May 2006

To: Senate
From: Senate Curriculum Committee

Re: **FACULTY OF LAW CURRICULUM REPORT**

Attached please find the following undergraduate proposals for your consideration:

1) The following new courses:
   a. **LAW 379** (8-12) d Externship
   b. **LAW 380** (3-6) d Externship Reflection

UBC Curriculum Proposal Form
Change to Course

Category: (1)

Faculty: Law **Department:** **Faculty Approval Date: 2/2/06** **Effective Session: Winter** **Term: 1** **Year: 2006 for Change**	**Date: April 20th, 2006** **Contact Person:** **Prof. Catherine Dauvergne /** **Karen Higginson (administrator)** **Phone: 604 822 6506 or 604 822 5018** **Email: dauvergne@law.ubc.ca or higginson@law.ubc.ca**
Proposed Calendar Entry: **Law 379 (8-12)d Externship** Students work for approved public sector organization, supervised by a Faculty approved mentor and a faculty member. *Co-requisite:* Law 380 Consult Faculty for full eligibility criteria. *Prerequisite:* Law 346 or Law 100. Law 280 or Law 470 highly recommended. Law 260 or Law 400 recommended.	**URL:** http://students.ubc.ca/calendar/courses.cfm?code=LAW **Present Calendar Entry:** n/a **Type of Action:** New course proposed **Rationale:** The demonstrated pedagogical value of externship placements in enhancing students' knowledge retention, engagement with professional training, and critical reflection on the practice of law is well documented in legal education literature. This course will provide a supervised field placement for law students. Placements will be with approved public sector organizations, including the BC Provincial Court, and will add greatly to the Community Service Learning opportunities at the Faculty. The following materials are attached as supporting documentation: 1. Course outline for Law 379 (and its companion course, Law 380); 2. An outline of the first proposed externship placements within the BC Provincial Court (ref: "Externship program").

UBC Curriculum Proposal Form
Change to Course

Category: (1)

Faculty: Law **Department:** **Faculty Approval Date: 2/2/06** **Effective Session: Winter** **Term: 1** **Year: 2006 for Change**	**Date: April 20th, 2006** **Contact Person:** **Prof. Catherine Dauvergne /** **Karen Higginson (administrator)** **Phone: 604 822 6506 or 604 822 5018** **Email: dauvergne@law.ubc.ca or higginson@law.ubc.ca**
Proposed Calendar Entry: **Law 380 (3-6)d Externship Reflection** Structured reflective exercises on the LAW 379 externship experience. *Corequisite:* Law 379	**URL:** **http://students.ubc.ca/calendar/courses.cfm?code=LAW** **Present Calendar Entry:** N/A **Type of Action:** New course proposed **Rationale:** This course will serve as a companion course to Law 379, and will provide a consistent reflective learning element amongst potentially diverse practicum experiences. The course will ensure a strong academic component to the externship opportunities. The following materials are attached as supporting documentation: 1. Course outline for Law 380; (and its companion course, Law 379).

THE UNIVERSITY OF BRITISH COLUMBIA

Enrolment Services
Senate and Curriculum Services
1874 – 2016 East Mall
Vancouver, BC
V6T 1Z1

4 May 2006

To: Senate
From: Senate Curriculum Committee

Re: **FACULTY OF SCIENCE CURRICULUM REPORT**

Attached please find the following undergraduate proposals for your consideration:

1) Changes to the academic regulations for the **Bachelor of Science** program:
    a. Academic Standing / Continuation Requirements
2) Creation of a **Dual Degree** Program in **Science** and **Arts**
3) Changes to the **Double Major in Science and Arts** program
4) Changes to the following specializations:
    a. Honours Genetics
    b. Honours Atmospheric Science
    c. Atmospheric Science
    d. Integrated Science Program
    e. Mathematics and Economics
    f. Physics
    g. Cognitive Systems

5) The following new, changed, and deleted courses:

ATMOSPHERIC SCIENCE

a. New Course: **ATSC 212** (1) Earth and Atmospheric Science Introductory Computing Laboratory

BIOLOGY

b. New Course: **BIOL 436** (3) Integrated Functional Genomics

COMPUTER SCIENCE

c. Deleted Course: **CPSC 100** (4) Elements of Computer Science

d. Changed Course: **CPSC 121** (4) Models of Computation
e. New Course: **CPSC 406** (3) Computational Optimization
f. Changed Course: **CPSC 417** (3) Computer Networking (Presently: Computer Communications)
g. Changed Course: **CPSC 444** (3) Advanced Methods for Human Computer Interaction (Presently: User Interface Design)

EARTH AND OCEAN SCIENCES

h. New Course: **EOSC 355** (3) The Planets
i. New Course: **EOSC 356** (1) Introduction to Planetary Science Laboratory

MATHEMATICS

j. Changed Course: **MATH 322** (3) Introduction to Algebra
k. Changed Course: **MATH 342** (3) Algebra, Coding Theory, and Cryptography

PHYSICS AND ASTRONOMY

l. New Course: **PHYS 210** (2) Introduction to Computational Physics
m. New Course: **PHYS 308** (3) Optics
n. New Course: **PHYS 348** (3) Frontiers in Physics

PSYCHOLOGY

o. New Course: **PSYC 469** (3) Psychoneuroimmunology

Contact: Dr. Bill Ramey
Phone: 822-3300
Faculty Approval Date: **March 2, 2006**
Email: wramey@interchange.ubc.ca

DEANS OFFICE

Effective Date for Change: 07W
Proposed Calendar Entry:

Academic Standing
An academic performance evaluation will be performed on each student at the end of each term of winter session and at the end of summer session as described under Academic Performance Evaluations (see Academic Regulations, Chapter V). Co-operative education work terms are not included in the evaluation. Courses are only included in an academic performance evaluation once a final grade has been assigned. For example, courses for which a deferred examination has been granted will be considered within the academic performance evaluation for the period in which the deferred examination is written.
The following tables determine the academic standing of a student following an academic performance evaluation based on the current academic standing, the credit-weighted average (AVG) and the percentage of the credits passed (CP).

Table 1: Academic Standing (9 credits or fewer attempted)

Current Academic Standing	Academic Performance	New Academic Standing
In Good Standing	AVG>=50% and CP>=50%	In Good Standing
	AVG<50% or CP<50%	On Academic Probation
On Academic Probation	AVG>=65% and CP=100%	In Good Standing
	AVG<50% or CP<50%	Failed
	Otherwise	On Academic Probation

Table 2: Academic Standing (more than 9

http://students.ubc.ca/calendar/index.cfm?tree=12,215 410,407
Present Calendar Entry:

~~**Continuation Requirements**~~
~~Students who do not achieve a level 5 on the LPI examination before completing 30 credits of Science-eligible courses, taken either at UBC or another post-secondary institution, will not be permitted to register in any additional credit courses until they successfully complete the LPI. See *Exemptions* under Language Proficiency Index Requirement for First-Year English. See also *English Requirement* under Bachelor of Science, Degree Requirements.~~

~~Students who do not meet the six-credit first-year English requirement before completing 60 credits of Science-eligible courses (30 credits for second-degree students), taken either at UBC or transferred from another post-secondary institution, will not be permitted to register in any additional credit courses other than first-year English until that requirement is satisfied. Students who approach the 60-credit limit will be restricted in taking further credits so as not to exceed the limit.~~

~~Continuation Requirements are listed in the table "Summary of Continuation Requirements" below. Subject to the above conditions, students who pass all courses in any Winter or Summer session will be assigned a Pass standing and will be eligible to continue their studies. Students who fail one or more courses but attain a sessional average of 55% or more in any Winter or Summer Session will also be assigned a Pass standing and will be permitted to continue their studies.~~

~~Students who attain a sessional average of less than 50% in any Winter or Summer Session will be assigned a Fail standing. They will be required to withdraw from the Faculty, unless this sessional average is based on fewer than 12 credits (Winter Session) or 6 credits (Summer Session) and there is no Fail or Academic Probation (ACPR) on their previous record, in which case they will be permitted to continue.~~

~~Students who fail one or more courses and attain a sessional average of at least 50% but less than 55% in a Winter or Summer Session will be placed on Academic~~

credits attempted)

Current Academic Standing	Academic Performance	New Academic Standing
In Good Standing	AVG>=55% and CP>=65%	In Good Standing
	AVG<55% or CP<65%	On Academic Probation
On Academic Probation	AVG>=55% and CP=100%	In Good Standing
	AVG<55% and CP<100%	Failed
	Otherwise	On Academic Probation

A student who is On Academic Probation is restricted to taking no more than 12 credits in either term of winter session or no more than 11 credits during summer session. That student must also submit an academic plan to an advisor in the Science Information & Advising Centre during each study term. A meeting with the advisor may be required.

A student who receives a standing of On Academic Probation for three consecutive academic progress evaluations will be assigned a Failed academic standing.

A student who receives a Failed academic standing will be required to discontinue his or her studies for 12 months. Normally, the student will be required to discontinue studies starting immediately.

However, a student registered in and attending one or more courses will be permitted to complete those courses if the determination of an academic standing of Failed is only made after the last date for withdrawal without a 'W' being recorded on the transcript.

A student appealing to the Faculty to be permitted to continue his or her studies immediately despite having received an academic standing of Failed may not register for or attend courses while awaiting the results of the appeal, except as noted above. A student On Academic Probation should maintain contact with his or her faculty advisor in case any circumstances arise that might adversely affect

~~Probation (ACPR). They will be permitted to continue their studies unless they had a Fail standing in any prior session or they were on Academic Probation in the previous session, in which case they will be assigned a Fail standing and required to withdraw from the Faculty.~~

~~Students assigned Academic Probation in one session will be removed from Academic Probation if, in a following session, they pass all courses and attain an average of at least 55% on at least 12 credits.~~

~~Students required to withdraw from the Faculty for poor academic performance or for failing~~ to meet promotion requirements within the maximum credit limits (see Promotion Requirements under Bachelor of Science, Degree Requirements) ~~or who otherwise leave UBC while ACPR is on their transcript~~ may apply for readmission after one full year, but ~~no~~ student ~~has~~ the right to readmission. Applications for readmission should be submitted to the Undergraduate Admissions Office. Applications will be considered by the Science Admissions, Adjudication, and Appeals Committee. In considering an application for readmission, the Committee will take into account any and all evidence of a student's ability to perform satisfactorily at the university level. ~~Under normal circumstances, t~~he committee will expect students ~~required to withdraw before completing 60 science-eligible credits and those who leave with ACPR on their transcript~~ to demonstrate their abilities by completing the following amount of work at a BC College or similar institution and attaining an overall G.P.A. of 2.50, calculated on all university-transfer work attempted after they were required to withdraw. A negative decision may be appealed to the Senate Admissions Committee. That Committee does not change decisions of the Faculty based on academic grounds but may grant an appeal if due process was not followed by the Faculty. Thus, unless the appellant supplies additional information in support of special consideration, the appeal to Senate is unlikely to succeed.

Students required to withdraw after completing more than 60 Science-eligible credits are encouraged to take courses at a College or similar institution, even though some of the credits so earned may not be transferable to UBC.

academic performance.

A student In Good Standing may withdraw voluntarily (i.e., not register for courses in a winter session) and apply for re-admission to a later session. No requirements to take courses at another institution or to meet a competitive admission average apply to such a student.

A student with a Failed standing or who fails to meet promotion requirements within the maximum credit limits (see *Promotion Requirements* under Bachelor of Science, Degree Requirements) **or who leaves UBC while On Academic Probation** may apply for readmission after one full year, but **such a** student **does not have** the right to **automatic** readmission. Applications for readmission should be submitted to the Undergraduate Admissions Office. Applications will be considered by the Science Admissions, Adjudication, and Appeals Committee. In considering an application for readmission, the Committee will take into account any and all evidence of a student's ability to perform satisfactorily at the university level. **The** committee will expect students **with a Failed standing who had successfully completed fewer than 60 science-eligible credits and those who leave while On Academic Probation** to demonstrate their abilities by completing the following amount of work at a BC College or similar institution and attaining an overall G.P.A. of 2.50, calculated on all university-transfer work attempted after they were required to withdraw. A negative decision may be appealed to the Senate Admissions Committee. That Committee does not change decisions of the Faculty based on academic grounds but may grant an appeal if due process was not followed by the Faculty. Thus, unless the appellant supplies additional information in support of special consideration, the appeal to Senate is unlikely to succeed.

Students required to withdraw after completing more than 60 Science-eligible credits are encouraged to take courses at a College or similar institution, even though some of the credits so earned may not be transferable to UBC.

Credits Completed Before Withdrawal	College Transfer Credits Required before applying for readmission
30 or fewer	30
31-45	24
46-60	12
More than 60	No requirement

~~Summary of Continuation Requirements~~

~~Sessional Average, Course Success~~	~~Student Previously in Good Standing~~	~~ACPR on Student Record~~	~~Fail on Student Record~~
~~55% or higher, passed all courses~~	~~Pass, eligible to continue~~	~~Pass, eligible to continue; ACPR lifted if enrolled in 12 or more credits~~	~~Pass, eligible to continue~~
~~At least 50% but less than 55%, passed all courses~~	~~Pass, eligible to continue~~	~~Pass, eligible to continue; ACPR carried forward~~	~~Pass, eligible to continue~~
~~55% or higher, failed one or more courses~~	~~Pass, permitted to continue~~	~~Pass, permitted to continue; ACPR carried forward~~	~~Pass, permitted to continue~~
~~At least 50% but less than 55%, failed one or more courses~~	~~ACPR, permitted to continue~~	~~Fail, required to withdraw~~	~~Fail, required to withdraw~~
~~Below 50%; enrolled in 12 or more credits (Winter) or 6 or more (Summer)~~	~~Fail, required to withdraw~~	~~Fail, required to withdraw~~	~~Fail, required to withdraw~~
~~Below 50%; enrolled in under 12 credits (Winter) or under 6 (Summer)~~	~~Fail, permitted to continue~~	~~Fail, required to withdraw~~	~~Fail, required to withdraw~~

Credits Successfully	College Transfer

Completed Before Withdrawal	Credits Required Before Applying for Readmission
30 or fewer	30
31-45	24
46-60	12
More than 60	No requirement

A student who had a standing of either On Academic Probation or Failed in their last term at UBC and who is re-admitted to the Faculty will be placed On Academic Probation in their first term.

Action: Delete the first two paragraphs and revise the rest of the Continuation Requirements to conform to the University-wide regulations approved by Senate on Academic Standing and Academic Performance Evaluations.

Rationale: Senate approved a new, uniform approach to the evaluation of academic performance at the end of each term of winter session and the end of summer session and left it to individual faculties to set criteria. Enrolment Services has produced the computer system to conduct the proposed evaluations of academic performance automatically. The Faculty of Science has been assessing performance after both summer and winter sessions but not after first term of winter session. Currently a student can go from In Good Standing to Failed, Required to Withdraw after one winter session. Assessing performance after each term of winter session rather than only at the end of second term will provide more timely warning to students who are performing poorly, in the form of an academic standing of On Academic Probation after first term. If the student's performance does not improve in the second term the outcome may still be a Failed standing in April and a requirement to withdraw but the Science advising unit will have a chance to intervene earlier. If a student starts first term of winter session already On Academic Probation the outcome of first term could be Failed standing and a requirement to withdraw. The use of different tables for determining academic standing depending on the number of credits completed allows for the fact that there is likely to be a wider variation in the average grade if fewer credits have been attempted. The first two paragraphs of the current entry are redundant since they are included in the English Requirement statement.

Effective Date for Change: 06W **Proposed Calendar Entry:** **Dual Degree Program in Science and Arts** **This program offers qualified students the opportunity to earn a Bachelor of Science and a Bachelor of Arts degree in most combinations of one Science major program and one Arts (BA) major program. Most combinations can be completed in from four and one-half to five and one-half winter sessions.** **Application for admission to the program is made through the Science Information & Advising Centre (see www.eScience.ubc.ca/academic). Acceptance into the program will be determined based on a review of both the applicant's transcript and a statement of academic purpose. Normally, application for admission will be made in the second term of the first year at UBC for students admitted directly from high school and in the summer before winter session for students admitted on transfer. Admission at any time is conditional; maintenance of good academic standing is required throughout the program. Admission to specializations within Science and Arts may be competitive and admission to the Dual Degree program does not imply future admission to particular specializations. The Dual Degree option is not open to students with a previous degree.** **Students must satisfy all of the degree and program requirements for both one major in the Bachelor of Science and one major in the Bachelor of Arts degrees. Students completing a BSc Major in one of the following disciplines may not also complete a BA Major in the same discipline: Computer Science, Geography, Mathematics, Mathematical Sciences, Psychology. Individual courses may be considered to satisfy requirements for both degrees. Students should endeavour to satisfy lower-level course prerequisites for both programs in their first two years. Entry into and continuation in a Dual Degree program**	Insert after PROGRAM REQUIREMENTS, DOUBLE MAJOR IN SCIENCE AND ARTS PROGRAM and before MINOR PROGRAM **Present Calendar Entry:** **None.** **Action:** Create new Dual Degree option **Rationale:** The Double Major in Science and Arts option has proven popular. Students in that option actually complete all the requirements for both a BSc and a BA degree but when the option was approved several years ago, the Arts Faculty Council did not agree to a Dual Degree designation. This change will make the arrangement parallel that between Arts and Applied Science which was approved subsequent to the Double Major in Science and Arts. The requirements for the Double Major will be reduced slightly for students who wish to study in both faculties but not to complete all the requirements for both degrees. Since this change is simply renaming the existing Double Major in Science and Arts degree option, there is no library impact.

require that the student remains in good academic standing. Students should meet with an advisor from the Board of Studies prior to enrolling in their first year of courses and at least annually thereafter.	

Effective Date for Change: 06W **Proposed Calendar Entry:** Program Requirements Double Major in Science and Arts Program Students must satisfy all degree requirements for a bachelor of Science Major in one program, including all Faculty of Science requirements. As far as the Arts Major is concerned a student need only satisfy **the remaining program requirements for the Bachelor of Arts Major (i.e., at least 42 and not more than 60 Arts credits in one subject or field of specialization including at least 30 upper-level credits)**. Courses may satisfy requirements for both programs. Students should endeavour to satisfy lower-level course prerequisites for both programs in their first two years. Entry into and continuation in a Double Major program requires that the student remain in good academic standing. The B.A. Major in Music is available as a second major for a B.Sc. student but it has limited access to performance courses. The Bachelor of Music is not available as a second major. Students interested in combining studies in Science and musical performance should consult advisors in both Faculties prior to admission to UBC to discuss the appropriate Faculty in which to enroll and to develop an academic plan. Students in the following B.Sc. Major programs may not complete a B.A. Major in the same subject: Geography, Mathematics, Mathematical Sciences, Psychology.	http://students.ubc.ca/calendar/index.cfm?tree=12,215,410,408 **Present Calendar Entry:** (as amended by Senate in January 2006) Program Requirements Double Major in Science and Arts Program Students must satisfy all degree requirements for a bachelor of Science Major in one program, including all Faculty of Science requirements. As far as the Arts Major is concerned a student need only satisfy ~~any remaining Faculty of Arts and~~ program requirements for the Bachelor of Arts Major. Courses may satisfy requirements for both programs. Students should endeavour to satisfy lower-level course prerequisites for both programs in their first two years. Entry into and continuation in a Double Major program requires that the student remain in good academic standing. The B.A. Major in Music is available as a second major for a B.Sc. student but it has limited access to performance courses. The Bachelor of Music is not available as a second major. Students interested in combining studies in Science and musical performance should consult advisors in both Faculties prior to admission to UBC to discuss the appropriate Faculty in which to enroll and to develop an academic plan. Students in the following B.Sc. Major programs may not complete a B.A. Major in the same subject: Geography, Mathematics, Mathematical Sciences, Psychology. **Action:** Modify the description of the Double Major in Science and Arts. **Rationale:** A new Dual Degree in Science and Arts option will require completion of all degree requirements for both the BSc and BA. The requirements for the Double Major in Science and Arts are being reduced slightly, therefore, to remove the requirement for the BSc student to complete all the BA degree requirements (i.e., the literature and language requirements) that are not specific program requirements.

Effective Date for Change: 06W **Proposed Calendar Entry:**	http://students.ubc.ca/calendar/index.cfm?tree=12,215,410,408 **Present Calendar Entry:** (as amended by Faculty Council in October 2005 and by Senate in January 2006)
Degree Requirements Graduation Requirements An Honours or … require more. … A Double Major in Science and Arts program requires a minimum of 120 credits, but in most cases will require more. Students who are in the Double Major program must satisfy all degree requirements for a Bachelor of Science Major in one area. As far as the Arts Major is concerned a student need only satisfy **the remaining** program requirements for the Bachelor of Arts Major. Courses may satisfy requirements for both programs. Students should endeavour to satisfy lower-level course prerequisites for both programs in their first two years.	Degree Requirements Graduation Requirements An Honours or … require more. … A Double Major in Science and Arts program requires a minimum of 120 credits, but in most cases will require more. Students who are in the Double Major program must satisfy all degree requirements for a Bachelor of Science Major in one area. As far as the Arts Major is concerned a student need only satisfy ~~Faculty of Arts and~~ program requirements for the Bachelor of Arts Major. Courses may satisfy requirements for both programs. Students should endeavour to satisfy lower-level course prerequisites for both programs in their first two years.
Dual Degree in Science and Arts Program **A Dual Degree in Science and Arts requires more than 120 credits, but must be completed within 180 credits attempted. Students in a Dual Degree Program must satisfy all of the requirements for both the Bachelor of Science and Bachelor of Arts degrees in their chosen programs. Courses may satisfy requirements for both degrees. Students should endeavour to satisfy lower-level course prerequisites for both programs in their first two years. Entry into and continuation in a Dual Degree program require that the student remains in good academic standing.** **In order to graduate in a Co-operative Education Program…**	In order to graduate in a Co-operative Education Program… **Action:** Modify the description of the Double Major in Science and Arts and add a new Dual Degree in Science and Arts. **Rationale:** A new Dual Degree in Science and Arts option will require completion of all degree requirements for both the BSc and BA. The requirements for the Double Major in Science and Arts are being reduced slightly, therefore, to remove the requirement for the BSc student to complete all the BA degree requirements (i.e., the literature and language requirements) that are not specific program requirements.

BIOLOGY

Effective Date for Change: 06W

Proposed Calendar Entry:
Honours (0415): Genetics (GENE)

….

Third and Fourth Years

…

BIOL 337, **437, or 444**	3
BIOL 433, 434, or 463	**3**

…

Electives[3]	**12**

…

http://students.ubc.ca/calendar/index.cfm?tree=12,215,410,418

Present Calendar Entry:
Honours (0415): Genetics (GENE)

…

Third and Fourth Years

…

BIOL 337 or 433	3

…

Electives[3]	~~15~~

…

Action: Add alternatives to the Genetics lab and an additional 3 credits in a choice of genetics specialization (plant genetics, developmental genetics or population genetics).

Rationale: The new molecular lab courses BIOL 437 and 444 are good alternatives to our Genetics lab (BIOL 337) for the program. Also, we would like to divert three credits from Electives to a genetics course, which may be chosen from 3 alternatives each of which represents an important area of specialization in genetics: plant genetics (BIOL 433), developmental genetics (BIOL 463) and population genetics (BIOL 434).

EARTH AND OCEAN SCIENCES

Effective Date for Change: **Proposed Calendar Entry:**	**http://www.students.ubc.ca/calendar/index.cfm?tree12,215,410,416** **Present Calendar Entry:**
Honours (0429): Atmospheric Science (ATSC)	Honours (0429): Atmospheric Science (ATSC)
First Year …	**First Year** …
Second Year ATSC 201, **212** 4 …. Total Credits 34	**Second Year** ATSC 201 ~~3~~ …. Total Credits ~~33~~
… Minimum credit for degree 135 …	… Minimum credit for degree ~~134~~ …
[4] Recommended electives: **CPSC 111**, EOSC 100-level or GEOG 102.	[4] Recommended electives: EOSC 100-level or GEOG 102. **Action:** Add ATSC 212 to second year. Increase number of second-year credits. Increase total credits for degree. Add CPSC 111 to recommended first-year electives. **Rationale:** A recent review of computation requirements for the degree suggests enhancing them. We will recommend students take CPSC 111 in addition to EOSC 211 and add a lab course in second term of second year (ATSC 212) that will focus on practical computing such as debugging, brief introduction to C++ and Fortran, etc.

Effective Date Change: 06W

Proposed Calendar Entry:

Major (0167): Atmospheric Science (ATSC)

First Year

ENGL 100-level[1]	6
CPSC 111	**4**
CHEM 121, 123 (or 111,113)	8
MATH 100 or 102 or 104 (or 120 or 180 or 184)	3(4)
MATH 101 or 103 or 105 (or 121)	3(4)
PHYS 107 (or 101)[2]	3
PHYS 108, 109 (or 102)	4(3)
Elective[2,3]	3
Total Credits	**33(36)**

Second Year

ATSC 201, **ATSC 212**	4
EOSC 211	3
EOSC 250	3
MATH 200, 215, 221	9
PHYS 216	3
Arts Electives[4]	**6**
Elective[4,5,6]	3
Total Credits	**31**

…

Minimum credits for degree	**124**

[4] 18 credits of electives must be numbered 300 or higher.

[5] **GEOG 200 is recommended.**

[6] Nine credits must be Science courses from outside the Major field, or Arts. The Major field includes all Atmospheric Science, Oceanography, Geography (Science) and Physics courses.

[7] Offered in alternate years.

[8] Selected from ATSC 406, ATSC 409, ATSC 414**; CHEM 302;** EOSC 354; GEOG 401, GEOG 402; PHYS 314.

http://students.ubc.ca/calendar/index.cfm?tree=12,215,410,416

Present Calendar Entry:

Major (0167): Atmospheric Science (ATSC)

First Year

ENGL 100-level[1]	6
CHEM 121, 123 (or 111,113)	8
MATH 100 or 102 or 104 (or 120 or 180 or 184)	3(4)
MATH 101 or 103 or 105 (or 121)	3(4)
PHYS 107 (or 101)[2]	3
PHYS 108, 109 (or 102)	4(3)
~~**Arts Elective**~~	~~**3**~~
Elective[2,3]	**3**
Total Credits	~~32(35)~~

Second Year

ATSC 201	~~**3**~~
EOSC 211 ~~(or CPSC 111)~~	3~~(4)~~
EOSC 250	3
~~GEOG 200~~	~~3~~
MATH 200, 215, 221	9
PHYS 216	3
Arts Elective[4]	~~3~~
Elective[4,5]	3
Total Credits	~~**30(31)**~~

…

Minimum credits for degree	~~**122**~~

[4] 18 credits of electives must be numbered 300 or higher.

[5] Nine credits must be Science courses from outside the Major field, or Arts. The Major field includes all Atmospheric Science, Oceanography, Geography (Science) and Physics courses.

[6] Offered in alternate years.

[7] Selected from ATSC 406, ATSC 409, ATSC 414; EOSC 354; GEOG 401, GEOG 402; PHYS 314.

Action: Add CPSC 111 to first year.
Remove Arts Elective from first year.
Increase number of first year credits.
Add ATSC 212 to second year.
Remove (CPSC 111) from second year.
Remove GEOG 200 from second year.
Increase Arts Electives from 3 to 6 credits.
Increase number of second year credits.
Increase Minimum credits for degree.
Add footnote 5.

	Renumber footnotes. Add CHEM 302 to electives. **Rationale:** Recent review of computational requirements for the degree suggests that both an object-oriented course (CPSC 111) and a numeric/application course (EOSC 211) should be part of the program. In addition a lab course in second term of second year (ATSC 212) will focus on practical computing such as debugging, brief introduction to C++ and Fortran etc. Increase in computational requirements force a reduction elsewhere. We are reluctantly removing GEOG 200. CHEM 302 is an appropriate atmospheric science elective and was missed from the earlier list.

INTEGRATED SCIENCES

Effective Date for Change: 06W

Proposed Calendar Entry:

Graduation Requirements

For the ISP degree options, the Faculty graduation requirements as stated under *Graduation Requirements* under Bachelor of Science, Degree Requirements apply, with the exception of the breadth requirement. The required credits in the **disciplines** and the Integration (ISCI) courses fulfill part of the minimum upper-level credit requirement.

Requirements for ISCI (1039): Integrated Sciences Program

- **Completion of a minimum of 33 credits of approved 300- or 400-level science courses in the areas of integration with at least 9 credits in each area. There must be at least 6 credits numbered at the 400 level and when possible there should be at least one 400-level course in each discipline. No more than six credits of directed studies can be counted in the integration.**
- **Completion of 7 ISCI credits including the one credit seminar course ISCI 300. An ISCI course must be taken in the first year in the program. ISCI 448 directed studies projects do not count towards this ISCI requirement.**
- **Approved programs are developed in consultation with ISP advisors. See the website <http://www.science.ubc.ca/~isp/application/requirements.php> for details.**

Requirements for ISCI (001511): Honours Integrated Sciences Program

- **Completion of a minimum of 42 credits of approved 300- or 400-level science courses in the areas of integration with at least 12 credits in each area. There must be at least 12 credits numbered at the 400 level and when possible there should be at least one 400-level course in each discipline.**
- **Completion of 7 ISCI credits including**

http://students.ubc.ca/calendar/index.cfm?tree=12,215,410,428#5451

Present Calendar Entry:

Graduation Requirements

For the ISP degree options, the Faculty graduation requirements as stated under *Graduation Requirements* under Bachelor of Science, Degree Requirements apply, with the exception of the breadth requirement. The required credits in the Areas of Concentration and the Integration (ISCI) courses fulfill part of the minimum upper-level credit requirement.

Requirements for ISCI (1039): Integrated Sciences Program

- ~~Completion of a minimum of 18 credits of 300- or 400-level courses in the areas of integration as designated in their application.~~
- ~~Nine credits of Integration Courses (ISCI). An ISCI course must be taken in a student's first term in the program. Since the topics of these courses may change from year to year, students should plan their programs to select ISCI courses in which they are most interested. Registration in ISCI courses will be limited, and ISP students will be given priority.~~
- ~~In addition to the nine ISCI credits mentioned above, students must take the one credit seminar course ISCI 300.~~
- ~~ISP students will develop a strong program of upper-level science courses, in consultation with ISP advisors. Students are expected to develop programs with 39 or more credits of upper-level science and with several 400-level courses.~~

Requirements for ISCI (001511): Honours Integrated Sciences Program

- ~~Six credits Honours thesis. Honours students in ISP write an Honours thesis that fits within the interdisciplinary mandate of the Program and the scientific disciplines that students are integrating. Students must take a six credit Directed Research course (449 course) in a suitable department that fits with the topic of their thesis. They may need to have certain prerequisites to take~~

the one credit seminar course ISCI 300. An ISCI course must be taken in the first year in the program. • **Completion of a six credit Honours thesis (449 course) in a subject related to one or more of the disciplines.** • **Approved programs are developed in consultation with ISP advisors and must satisfy the faculty of Science requirements for honours programs. Students must complete 30 credits each winter session and maintain a minimum sessional average of at least 75% since third year standing and at least 68% before third year standing. See the website <http://www.science.ubc.ca/~isp/application/requirements.php> for details.**	~~these courses. For their research thesis, students are encouraged to arrange for co-supervision by faculty members representing the disciplines that the student is integrating. If desired, ISP provides an ISP examiner (i.e, a faculty member associated with ISP) for thesis examinations of ISP Honours student.~~ • ~~Completion of a minimum of 36 credits of 300- or 400-level courses in the areas of integration as designated in their application. At least 12 of those credits must be at the 400 level. It is recommended that students take research related courses (topics courses, seminars, research methodologies) in preparation of their Honours thesis 449 course.~~ • ~~Twelve credits of Integration Courses (ISCI). An ISCI course must be taken in a student's first term in the program. Since the topics of these courses may change from year to year, students should plan their programs to select ISCI courses in which they are most interested. Registration in ISCI courses will be limited, and ISP students will be given priority.~~ • ~~In addition to the 12 ISCI credits mentioned above, students have to take the one credit seminar course ISCI 300.~~ • ~~In addition to the Faculty continuation and graduation requirements for Honours students, ISP Honours students need to maintain a minimum average of 75% in each term of their tenure in the Honours ISP.~~ **Action:** Replace the current description for the ISCI Programs. **Rationale:** A recent review of the ISP indicated that the program requirements should be strengthened and clarified. The proposed changes will bring the programs in line with the depth of specialization expected in other BSc programs.

MATHEMATICS

Effective Date for Change:
Proposed Calendar Entry:

Major (1135): Mathematics and Economics (MATH, ECON)

First Year

….

Second Year

ECON 200- or 300-level[12]	6
MATH 200 (or 226), 215, 220, 221 (or 223)	12
BIOL, ASTR, EOSC, GEOG, or PSYC[8]	3
Electives[9,10]	9
Total Credits	30

Third and Fourth Years

ECON **301, 302,** 325[13] , 326, 490	**15**
ECON courses numbered 300 or above[12]	**3**
MATH courses numbered 300 or above[14]	**18**
Science courses numbered 300 or above[10]	**12**
Elective(s)[9,10]	12
Total Credits	60
Minimum credits for degree	121

….

[12]ECON 320 cannot be used to fulfill these requirements.

[13] STAT 200 can substitute for ECON 325.

[14] Suitable electives include MATH 302, 303, 320, 321, 402, 403, 418, 419, 443 **and MATH 320 would be valuable for graduate study in Economics.**

http://www.students.ubc.ca/calendar/index.cfm?tree 12, 215,410,429

Present Calendar Entry:

Major (1135): Mathematics and Economics (MATH, ECON)

First Year

…

Second Year

ECON 304, 305	6
MATH 200 (or 226), 215, 220, 221 (or 223)	12
BIOL, ASTR, EOSC, GEOG, or PSYC[8]	3
Electives[9,10]	9
Total Credits	30

Third and Fourth Years

ECON 306, 325[13] , 326, 490	12
~~MATH 320~~	~~3~~
ECON courses numbered 300 or above	3
ECON courses numbered 400 or above	3
MATH courses numbered 300 or above[13]	9
Science courses numbered 300 or above	18
Elective(s) [9,10]	12
Total Credits	60
Minimum credits for degree	121

….

[12] STAT 200 can substitute for ECON 325.

[13] Suitable electives include MATH 302, 303, 321, 402, 403, 418, 419, 443.

Action: Correct ECON 100 to be ECON 101. Change second year ECON requirement while adding footnote 12 concerning ECON 320. Add ATSC as fulfilling Science degree requirement. Add footnote 12 concerning ECON 320. Change MATH numbered 300 or above requirement from MATH 320 and 9 additional credits to 18 unspecified credits. This reduces the SCIENCE numbered 300 or above requirement to 12 credits. Change required ECON numbered 300 or above requirements to have 15 specified credits and 3 credits electives. Renumber footnotes 12, 13. Extend new footnote 14 to mention MATH 320 as a particularly valuable course.

	Rationale: The current combined major MATH/ECON does not follow the standard Arts or Science formulas for combined majors. In particular it has fewer credits. The character of the program was to provide preparation for graduate school in Economics and the course MATH 320 provided a very high barrier for graduation. MATH 320 in Real Analysis is a central course in the Honours Math program and has very high standards. An average majors in Mathematics would not succeed in this course. The consequence has been few students graduating in the program despite many students starting in the program. The proposed program would be accessible to more majors students. It would not be preparation for graduate school directly although, of course, the most able students could use it as preparation. We have extended the footnote on suggested Math electives to mention MATH 320 that might be suitable for the most able majors students. The proposed program includes the Economics Major core in 3rd and 4th year. The program includes 18 credits of first and second year Mathematics courses as a core. It is usual in Mathematics majors to not specify the 3rd and 4th year Mathematics courses. This proposed program is similar to the B.Sc. combined major STAT and ECON. We have specified that ECON 320 cannot be used to fulfill ECON requirements since it is redundant for mathematically trained students.

PHYSICS AND ASTRONOMY	
Effective Date for Change: 06W **Proposed Calendar Entry:** Major (0524): Physics (PHYS) … 5. Admission requirement: overall average of 60% in first-year Physics **and Mathematics** or permission of the Department Head. …	http://students.ubc.ca/calendar/index.cfm?tree=12,215,410,434 Present Calendar Entry: Major (0524): Physics (PHYS) **…** 5. Admission requirement: overall average of 60% in first-year Physics or permission of the Department Head. … **Action:** Modify footnote five. **Rationale:** Student records for the period 1999-2002 show that students who did not achieve an overall average of 60% in first year physics and mathematics were unlikely to succeed in the physics majors program. The second year majors physics program has an equal number of required Physics and Mathematics courses (3 of each). Including mathematics in the admission requirement broadens the admission criteria to performance on four courses rather than two, enabling a more reliable assessment of likely success. Including Mathematics in the admission criteria may enable some student who performed better in first year Mathematics than in first year Physics to enter the Physics majors program who otherwise would not be able to.

PSYCHOLOGY	
Effective Date for Change: 06W **Proposed Calendar Entry:** Cognitive Systems **The Cognitive Systems (COGS) program provides B.Sc. and B.A, degrees in Cognitive Systems via interdisciplinary studies of perception and cognition, from the perspective of one of the following three streams:** **1) Cognition and Brain (supervised by Psychology), 2) Language (supervised by Linguistics), 3) Computational Intelligence and Design (supervised by Computer Science).** **The aim of the program is to equip graduates with the background competence to be able to enter graduate programs in one of the supervisory disciplines or in cognitive systems/cognitive science itself.** **Students registered in the Faculty of Science may enroll in either the Cognition and Brain stream or the Computational Intelligence and Design stream. Faculty of Arts students may enroll in either the Cognition and Brain stream or the Language stream. All students in the program must take a set of team-taught connector courses (COGS 200, 300, 401, and 402), as well as background courses in both Computer Science and Philosophy.** **Admission to the program, normally at the end of the first or second year, depends on academic performance. Admission requires a minimum overall average of 68% in the preceding year(s) and a minimum grade of 68% in COGS. However, meeting these acceptance conditions does not guarantee acceptance into the program. Once admitted to the program, students must maintain at least a 67% yearly average for continuation.** **For specific program and admission information about the B.Sc. and B.A. degrees in Cognitive Systems see the Faculty of Science entries for Computer Science and Psychology and the Faculty of Arts entries for Linguistics and Psychology.** **For current information about the people, institutions and events associated with the Cognitive Systems Program, see the Cognitive Systems website. http://www.cogsys.ubc.ca**	**http://students.ubc.ca/calendar.index.cfm?tree=12,215,410,681** **Present Calendar Entry:** Cognitive Systems ~~For information on the B.Sc. Major in Cognitive Systems: Cognition and the Brain, see the listing under Psychology, p. 427~~ **Action:** Replace text so as to provide complete description of Cognitive Systems program at this point in the Calendar. [Corresponding section in Psychology has been changed so as to refer to this section]. **Rationale:** Creates a more compact format, since Computer Science description can also point to this, rather than being a repetition. This both saves space and makes future changes easier to implement. Also brings the format and description into line with the one being proposed for the B.A. stream of Cognitive Systems, allowing a unity of style for all streams

ATMOSPHERIC SCIENCE

Effective Date Change: 06W **Proposed Calendar Entry:** **ATSC 212 (1) Earth and Atmospheric Science Introductory Computing Laboratory.** **Computing tools, including Unix/Linux, Web page creation, programming languages used for numerical calculation, database programs.** **Prerequisites: One of CPSC 111, EOSC 211.** **[0-2-0]**	**Present Calendar entry:** None. **Action:** New course. **Rationale:** To succeed professionally as atmospheric scientists, students need computing skills in addition to the Java programming they learn in CPSC 111 and the Matlab scripting they learn in EOSC 211. The tools to be covered will help them in their subsequent undergrad courses at UBC, and will make them more attractive to industry and government or more successful as graduate students. **Supporting Documents:** SCI-05-2-ATSC 212

BIOLOGY

Effective Date for Change: 06W **Proposed Calendar Entry:** **BIOL 436 (3) Integrated Functional Genomics. Global transcript, protein and metabolite profiling technologies, and their integration; applications focus on plant functions and plant interactions with pathogens and pests.** **Prerequisites: BIOL 335.** **Equivalent: FNH 436.** **[3-0-0]**	**Present Calendar Entry:** None. **Action:** New course. **Rationale:** Making biological sense out of genome sequences is one of the primary goals of many genome research projects. The functions of a large percentage of the genes identified by genome-sequencing projects are initially predicted using computational methods. The predictions are then validated using experimental evidence from a combination of gene, protein, and metabolite expression/profiling studies. In this introductory course, genome-wide analysis of gene function, using high-throughput transcript, protein and metabolite profiling, in conjunction with bioinformatics, will be discussed. Particular emphasis will be placed on the integration of these complementary approaches to ask specific biological questions. **Supporting Documents:** SCI-05-02-BIOL 436

COMPUTER SCIENCE

Effective Date for Change: 06W **Proposed Calendar Entry:** **None.**	**Present Calendar Entry:** ~~CPSC 100 (4) Elements of Computer Science. An introduction to elementary concepts in Computer……. And programming. [3-3-1]~~ **Action:** Delete course. **Rationale:** A large part of the material of CPSC 100 is not considered to be university-level material any more. Topics like word processing, spreadsheet basics, MS Access usage, etc. are more

	appropriate for professional, non-academic, non-credit courses. We plan to replace CPSC 100 with more sections of CPSC 111 which provides a better introduction to the main concepts of Computer Science.
Effective Date for Change: 06W **Proposed Calendar Entry:** CPSC 121 (4) Models of Computation. …. Prerequisite: **Principles of Mathematics 12.** **Co-requisite: CPSC 111.**	**Present Calendar Entry:** CPSC 121 (4) Models of Computation. … **Prerequisite:** ~~MATH 12.~~ **Action:** Change prerequisite, add a co-requisite. **Rationale:** "MATH 12" is ambiguous as there is more than one mathematics course for grade 12. Principles of Mathematics 12 is the correct grade 12 math prerequisite for this course. The familiarity with programming concepts which is provided by CPSC 111 will help CPSC 121 students to better understand the course material.

Effective Date for Change: 06W **Proposed Calendar Entry:** **CPSC 406 (3) Computational Optimization. Formulation and analysis of algorithms for continuous and discrete optimization problems; linear, nonlinear, network, dynamic, and integer optimization; large-scale problems; software packages and their implementation; duality theory and sensitivity.** **Prerequisites: MATH 340 and one of CPSC 302, CPSC 320. [3-0-0]**	**Present Calendar Entry:** None. **Action:** New course. **Rationale:** Numerical optimization is increasingly recognized as a vital tool in computer science and engineering. It is integral to the design process in many industries. Hence, practitioners are needed who are skilled in framing and modeling optimization problems, and trained in the standard techniques for their solution. This course is designed to provide these skills and knowledge. It will give students an understanding of the computational strengths and weaknesses of the main optimization algorithms and show them how to apply them in practice. It will also give them experience using standard software packages and libraries that they might encounter in industry or graduate school. We expect more demand for this course than our current upper level theoretical courses. **Supporting Documents:** SCI-05-2-CPSC 406

Effective Date for Change: 06W **Proposed Calendar Entry:** CPSC 417 (3) **Computer Networking. Network protocols and architecture including internetworking, the Internet, layered communication protocols, routing, flow and congestion control, network performance, wired and wireless data communication.** Prerequisite: **All of CPSC 313, CPSC 317**	**Present Calendar Entry:** CPSC 417 (3) ~~Computer Communications. Layered protocols, packet switching, data communications, and queuing analysis. Data link controls. Virtual circuits, datagrams, network design, routing, flow and congestion control. Satellite and packet radio links. Local area networks.~~

and one of STAT 200, STAT 241. [3-0-0]	Prerequisites: ~~One of CPSC 313, CPSC 315~~ and one of STAT 200, STAT 241. [3-0-0] **Action:** Change the title, description and prerequisites. **Rationale:** The current title and the description of the courses are obsolete. The revised description represents the current directions and practices in the field. The CPSC 315 prerequisite has been changed to CPSC 313 and CPSC 317 because CPSC 315 has been deleted and is no longer available.
Effective Date for Change: **Proposed Calendar Entry:** CPSC 444 (3) **Advanced Methods for Human Computer Interaction.** **Design and evaluation methodologies and theories; formal models of the user including visual, motor, and information processing; advanced evaluation methods including laboratory experiments and field studies; HCI research frontiers.** **Prerequisites: CPSC 344 and one of STAT 200, STAT 241.** **Co requisites: One of CPSC 319, CPSC 398.** **[2-2-2]**	**Present Calendar Entry:** CPSC 444 (3) ~~User Interface Design.~~ ~~User-centered design, analysis, prototyping, and evaluation of interactive systems based on formal models of human behavior and software development methodology. (Consult the Credit Exclusion List within the Faculty of Science section of the Calendar). [3-1-0]~~ **Action:** Replace old course with the new course. **Rationale:** Last year we created a new course, CPSC 344 that covered some of the material that was covered by the current CPSC 444. This proposal is to update CPSC 444 to take into account the new course. The proposed CPSC 444 maintains most of the material from the old CPSC 444, but is treating that material in more depth and with secondary support through hands-on exercises done in the Problem-Based Sessions. The new title, description and prerequisites reflect these changes. We would also like to point out that the prerequisites of the current entry are wrong. **Supporting Documents:** SCI-05-2-CPSC 444

EARTH AND OCEAN SCIENCES

Effective Date for Change: 06W **Proposed Calendar Entry:** **EOSC 355 (3) The Planets.** **Diversity among the planets and moons of the solar system; integrating concepts across scientific disciplines including geology, geophysics and atmospheric science to understand how planets evolve.** **Prerequisites: Either (a) SCIE 001 or (b) one of MATH 101, MATH 103, MATH 105, MATH 121 and one of CHEM 111, CHEM 121, CHEM 154 and one of PHYS 101, PHYS 107, PHYS 153. [3-0-0]**	**Present Calendar Entry:** None. **Action:** New course. **Rationale:** Earth and Ocean Sciences and Physics and Astronomy have sponsored a planetary science program. This course with its companion lab, EOSC 356, will provide an opportunity for students interested in planetary research to experience real, topical problems in planetary science. Also, EOSC 355 will provide an introduction to Planetary Science (and geophysics in general) for EOSC majors focusing in other disciplines. We hope it will be a popular elective course for Science and Applied Science students. In addition, this source

	will be one o a selected suite of four courses in Earth and Ocean Sciences designed to give General Science students a broad knowledge of physical sciences within EOSC. This course complements the content of ASTR 101 with its focus on the Sun and is at a higher level as it uses university math, chemistry, and physics to take an integrative approach. **Supporting Documents:** SCI-05-2-EOSC 355
Effective Date for Change: 06W **Proposed Calendar Entry:** **EOSC 356 (1) Introduction to Planetary Science Laboratory.** **Computer and web-based exercises, visualizations, and reading assignments on current research topics in planetary science.** **Prerequisites: One of EOSC 211, EOSC 212, MATH 200, MATH 217, MATH 226, MATH 253, MATH 263.** **Co-requisite: EOSC 355 [0-2-0]**	**Present Calendar Entry:** None. **Action:** New course. **Rationale:** Earth and Oceans and Physics and Astronomy have sponsored a planetary science program. This course, with its companion lecture, EOSC 355, will provide an opportunity for students interested in planetary research to experience real, topical problems in planetary science. The labs will expose students to planetary science data sets and models and engage them in research. **Supporting Documents:** SCI-05-2-EOSC 356

MATHEMATICS	
Effective Date for Change: 06W **Proposed Calendar Entry:** MATH 322 (3) Introduction to Algebra. … Prerequisite*:* **One of MATH 220, MATH 226 and a grade of 80% or higher in one of MATH 152, MATH 221, or a grade of 68% or higher in MATH 223.**	**Present Calendar Entry:** MATH 322 (3) Introduction to Algebra. … Prerequisite: One of MATH 152 (with 80% or above), MATH 221 (with 80% or above), MATH 223 (with 68% or above) and one of MATH 220, ~~CPSC 121~~, MATH 226. **Action:** Change prerequisite, delete CPSC 121. **Rationale:** The grade requirements have been rewritten in the standard style. CPSC 121 is used as providing a background in `rigour' for Majors courses. For Honours courses we prefer either MATH 220 or MATH 226. MATH 322 is an honours course. There is no change in the outline or in the library requirements.
Effective Date for Change: 06W **Proposed Calendar Entry:** MATH 342 (3) Algebra, Coding Theory, and Cryptography. …… Prerequisite*:* One of MATH 152, MATH 221, MATH 223 **and one of MATH 220, MATH 226, CPSC 121.**	**Present Calendar Entry:** MATH 342 (3) Algebra, Coding Theory, and Cryptography. … Prerequisite: One of MATH 152, MATH 221, MATH 223. **Action:** Add prerequisite. **Rationale:** Add a requirement for a background in `rigour' for the proof content of the course. Computer Science majors would typically be unaffected (they

	take CPSC 121 early) but may affect Mathematics majors who delay taking MATH 220. There is no change in the outline or the library requirements.

PHYSICS AND ASTRONOMY	
Effective Date for Change: 06W	
Proposed Calendar Entry: **PHYS 210 (3) Introduction to Computational Physics.** **Methods and approaches, with applications to mechanics and electromagnetism.** **Prerequisite: PHYS 102 or PHYS 108 or SCIE 001.** **Co-requisite: MATH 221 (or MATH 223).** **[1-0-2; 1-0-2]**	**Present Calendar Entry:** None. **Action:** New course. **Rationale:** Computational physics is an essential part of the skill set required to do research in physics. Presently physics students are taught the necessary skills piecemeal in lab courses or are expected to learn the material on their own. As a result a majority of physics students are not adequately prepared for computational assignments in third and fourth year physics courses. No suitable course is offered in the Faculty of Science.
Effective Date for Change: 06W	
Proposed Calendar Entry: PHYS 308 (3) Optics. Physical optics: polarization, Fresnel equation, coherence, interference, diffraction, lasers, holography, Fourier optics. Prerequisites: **One of PHYS 102, PHYS 108, PHYS 153, SCIE 001 and one of MATH 217, MATH 227, MATH 317.** **Co-requisite: MATH 215. [2-3-0]**	**Present Calendar Entry:** PHYS 308 (3) Optics. Physical optics: polarization, Fresnel equation, coherence, interference, diffraction, lasers, holography, Fourier optics. Prerequisites: ~~Either (a) one of PHYS 1021, PHYS 153, SCIE 001 or (b) all of PHYS 108, PHYS 109~~. [2-3-0] **Action:** Change prerequisites. **Rationale:** Based on student experience, first-year courses do not provide adequate preparation for this course. A higher level prerequisite is required. The prerequisites for this course were reduced to first year physics in 2001. This has not worked. Some students have been struggling with this course and the failure rate is unacceptably high. The new prerequisites are the same as for PHYS 301. Programs that include PHYS 308 as a required There is no change in outline or in library requirements.
Effective Date for Change: 06W	
Proposed Calendar Entry: **PHYS 348 (3) Frontiers in Physics.** **Topics in physics with a choice of independent supervised research projects. Prerequisite: Third year standing in a physics honours program or fourth year standing in a physics majors program. [1-0-1]**	**Present Calendar Entry:** None. **Action:** Create new course. **Rationale:** This course provides an opportunity for students to carry out a research project and learn about selected frontier topics in physics. Majors physics students do not do the honours

	undergraduate thesis project (PHYS 449) and as a consequence have limited opportunity to carry out research or learn about the latest discoveries in physics. This course involves independent learning similar to a directed studies course or an undergraduate thesis project course, therefore the number of formal meeting times do not reflect the credit value of the course in same way that they do in a lecture course. **Supporting Documents:** SCI-05-2-PHYS 348

PSYCHOLOGY	
Effective Date for Change: 06W **Proposed Calendar Entry:** **PSYC 469 (3) Psychoneuroimmunology. Research linking psychological characteristics with the immune system, including implications regarding the onset and course of disease. Prerequisites: One of PSYC 314, PSYC 360; and all of MICB 302.**	**Present Calendar Entry:** None. **Action:** New course. **Rationale**: The Psychology Department currently offers one course in health psychology (PSYC 314). It is one of the most heavily enrolled and highly rated courses in the Department. Currently, the Department doesn't offer any specialized courses for the many students who want to pursue this area further. A similar problem exists for the Department's major course in behavioral neuroscience (PSYC 360). There is great demand for more in-depth courses in this area, but very few are currently being offered at the 400-level. This proposed course would address both of these problems. It will focus on research in the field of psychoneuroimmunology, which examines connections between behavioral processes and the immune system. The area of research is interdisciplinary, focusing on both psychological and biological mechanisms in disease. For psychology majors, it will build on the knowledge gained in PSYC 314 and PSYC 360. For students coming from a life-science background, it will introduce advanced psychological concepts, and show how they can be integrated with knowledge of biological systems. The interdisciplinary nature of the course should make it appealing to students pursuing B.A. and B.Sc. degrees. **Supporting Documents**: SCI-05-02-PSYC 469

Enrolment Services
Senate and Curriculum Services
1874 – 2016 East Mall
Vancouver, BC
V6T 1Z1

4 May 2006

To: Senate
From: Senate Curriculum Committee

Re: **COLLEGE OF HEALTH DISCIPLINES CURRICULUM REPORT**

Attached please find the following undergraduate proposals for your consideration:

1) The following new courses:
   a. **IHHS 302** (3) Topics in Health Informatics for Health/Life Sciences Students
   b. **IHHS 408** (3) Topics in Aboriginal Health: Community-Based Learning Experience

UBC Curriculum Proposal Form
Change to Course or Program

Category: (1)

Faculty: College of Health Disciplines **Faculty Approval Date:** **Effective Session _2006S__ Term __**	**Date:** March 10, 2006 **Contact Person:** Dr. Kendall Ho **Phone:** 604 639-4668 **Fax:** 604-630-0827 **Email:** kho@cpdkt.ubc.ca **Alternate email** assocdeansec@cpdkt.ubc.ca
Proposed Calendar Entry: IHHS 302 (3) *Topics in Health Informatics for Health/Life Sciences Students*	**Type of Action:** new course **Rationale:** Closely linked to information technology, **health informatics is the scientific field that deals with the storage, retrieval and optimal use of information**, data and knowledge in the healthcare context. This course is designed for students across life and health sciences disciplines, particularly those planning to pursue a career in the health professions. Students will learn about information technology concepts essential to an understanding of health informatics. This knowledge will prove useful for those planning a career in healthcare, an increasingly high-technology field. Supported by the Teaching and Learning Enhancement Fund of UBC, this project's goal is to develop and deliver two health informatics courses (a one-week intensive summer course and an on-line course). As part of the course development process, the project team hosted *Computing Fundamentals for Health Informatics*, a two-day health informatics workshop for life and health sciences students at UBC in August 2005. This workshop was an opportunity for students to develop professionally and network with faculty members and fellow students in the life, health and computing sciences. Student attendees participated in the workshop evaluation and provided valuable feedback to inform course

	development. This course provides the opportunity for students to learn about health informatics, subject matter they may not otherwise be exposed to in their regular coursework. Further, the course is developed by an interprofessional team and designed for an interdisciplinary audience. Information technology cuts across all health disciplines. The opportunity to bring students from various disciplines together to learn may contribute to emerging professionals' understanding of collaborative team-based care. Students will learn about the history and development of health informatics across healthcare sectors. In so doing they will collaborate with others and learn about interrelations of disciplines in the healthcare context. Understanding the roles of information and communication technologies in healthcare, underlying principles and key innovations in health informatics, and problem solving regarding implementation issues in an interprofessional grouping, will position students well to make decisions about healthcare careers.

UBC Curriculum Proposal Form
Change to Course or Program

Category: (1)

Faculty: College of Health Disciplines **Faculty Approval Date:** **Effective Session _2006S__ Term __**	**Date:** March 1, 2006 **Contact Person:** Drs. Kendall Ho and Robert Woollard **Phone:** (604) 875-4995 (604) 827-4168 **Email:** kho@cpdkt.ubc.ca; assocdeansec@cpdkt.ubc.ca; woollard@familymed.ubc.ca; joan.decker@familymed.ubc.ca.
Proposed Calendar Entry: IHHS 408 (3) *Topics in Aboriginal Health: Community-based learning experience*	**Type of Action:** new course **Rationale:** Interprofessional education (IPE) and collaborative patient-centered care (CPCP) have increasingly been recognized as an essential aspect of sustainable health care reform. However, very few opportunities for students to participate in interprofessional learning within an Aboriginal community setting have been established. This course addresses this need by enabling health discipline students to gain direct experience working with Aboriginal patients and community members. By situating academic learning within an intensive four-week immersion program this course offers students a truly unique and memorable learning experience. Key objectives of this course are to (1) address the lack of education in Aboriginal health across health professions by recognizing Aboriginal communities as partners in health education and professional training and (2) promote students' understanding of the roles and responsibilities of other professions when working with Aboriginal patients and communities. This course will enhance student learning at both the general and

discipline-specific levels by utilizing a combination of community-based, immersion activities (enabling students to become more caring, reflective practitioners as a whole) and student-preceptor models of learning (thereby enabling students to become better technical practitioners of their discipline).

Relation to Other IHHS Offerings

This course provides an ideal complement to extant IHHS Aboriginal health courses (namely IHHS 301 and IHHS 404), by enriching students' academic knowledge with an opportunity to learn about and explore topics in Aboriginal health within a real-life setting.

Course Specifics

The Aboriginal community partners for this course are Mount Currie Band (near Pemberton, BC) and Cowichan Band (near Duncan, BC). These communities have been and will remain essential contributors to all aspects of course development, including curriculum design, course implementation, course delivery and evaluation. This course is directed toward health professional students particularly in the areas of medicine, nursing, pharmacy, social work, rehabilitation sciences and dentistry at the undergraduate level. Graduate students and medical residents are also welcome to take this course. Implementation of the pilot course is planned for June/July 2006, with a maximum of 10 student placements (five per community).

The organizers of this course hope to engage students and community preceptors from each of the above mentioned disciplines. If a certain discipline is not able to be represented by a student in each community, remaining students will be paired with a preceptor from the 'missing'

	discipline in order to ensure exposure and understanding of the roles and responsibilities within that disciplines. Similarly, if a specific discipline is not able to be represented by a corresponding preceptor, students will be paired with the community health professional responsible for addressing such needs within that discipline (e.g. a nurse who may also fulfill the role of social worker) and/or paired with a preceptor from the nearby communities of Duncan or Pemberton.