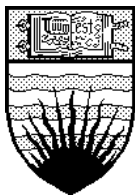


# THE UNIVERSITY OF BRITISH COLUMBIA

Senate Agenda Item 08



March 1, 2007

## ENROLMENT SERVICES

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To: Okanagan Senate  
From: Senate Curriculum and Admissions & Awards Committees

Re: **February New Program Proposals**

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Our committees have reviewed the material forwarded to us by the faculties, and encloses those proposals we deems as ready for approval.

As such, the following is recommended to Senate:

*“That Senate approves the **Master of Science and Doctor of Philosophy in Chemistry, the Master of Science and Doctor of Philosophy in Mathematics, and the Developmental Standard Teaching Certificate in Okanagan Language and Culture; and their associated courses.***

## UBC Curriculum Proposal Form Change to Course or Program

<b>Faculty:</b> <u>I.K Barber School</u> <b>Department:</b> <u>Chemistry</u> <b>Faculty Approval Date:</b> <b>Effective Session</b> <u>Winter</u> <b>Term</b> <u>1</u> <b>Year 2007 for Change</b>	<b>Date:</b> <u>February 5, 2007</u> <b>Contact Person:</b> <u>David Jack</u> <b>Phone:</b> <u>250 807-8747</u> <b>Email:</b> <u>david.jack@ubc.ca</u>
<p><b>Proposed Calendar Entry:</b></p> <p><b>CHEMISTRY</b></p> <p>Degrees Offered: Ph.D., M.Sc.</p> <p><b>PROFESSORS</b></p> <p>A. Abd-El-Aziz.</p> <p><b>ASSOCIATE PROFESSORS</b></p> <p>N. Eggers, D. Jack, E. Neeland, K. Perry, P. Phillips, K. Smith, A. Vaisius.</p> <p><b>ASSISTANT PROFESSORS</b></p> <p>S. Mahmoud, S. McNeil, S. Murch, R. O'Brien, P. Shipley.</p> <p><b>PROGRAM OVERVIEW</b></p> <p>The Chemistry Graduate Program offers the research-based degrees Master of Science in Chemistry and Doctor of Philosophy in Chemistry. The program offers a variety of research areas including analytical, environmental, inorganic, organic, and physical chemistry.</p> <p><b>DOCTOR OF PHILOSOPHY</b></p> <p><b>Admission Requirements</b></p> <p>The program is governed by the general graduate guidelines of the University of British Columbia Okanagan College of Graduate Studies' policies and procedures, including its standards for admission of</p>	<p><b>URL:</b></p> <p><b>Present Draft Calendar Entry:</b></p> <p><b>Type of Action:</b> New admission guidelines required as part of proposed Chemistry Graduate Program</p> <p><b>Rationale:</b> (see attached supporting documents)</p>

students. Ph.D. applicants will have either a M.Sc. in Chemistry or a related field, with a B+ (76%) average or better in their M.Sc. coursework and thesis, or a B.Sc. in Chemistry or a related field with an A- (80%) average or better in their third and fourth year classes. Their background training must be sufficient for advanced work in their chosen field.

Students registered in the M.Sc. program may transfer to the Ph.D. program within their first year of study after completing M.Sc. level courses worth 12 credits with an A- (80%) average or better and being approved by their research committee. Such transfers must comply with the regulations of the College of Graduate Studies.

In exceptional cases, applicants who do not meet the requirements stated above but who have had significant formal training and relevant professional experience to offset such deficiencies, may be granted admission on the recommendation of the Chemistry Graduate Program Committee and approval of the Dean of the College of Graduate Studies.

### **Program Requirements**

The Ph.D. degree is based on substantial original research conducted under the supervision of a faculty member of the Chemistry Graduate Program. Ph.D. students must submit their research in the form of a thesis and are not required to complete coursework unless specified by their supervisory committee, or as a condition of admission. Within 12 months of registering in the Ph.D. program (or 24 months if entering with only a B.Sc.) students are required to present a research proposal and pass a comprehensive oral examination designed to assess the student's breadth of knowledge in the

general subject area(s) of the proposed research.

## **MASTER OF SCIENCE**

### **Admissions Requirements**

The program is governed by the general graduate guidelines of the University of British Columbia Okanagan College of Graduate Studies' policies and procedures, including its standards for admission of students. Applicants to the M.Sc. program are expected to have a B.Sc. in Chemistry or a related field, with a B+ (76%) average or better in their third and fourth year classes or at least 12 credits in third and fourth year classes in their intended field of study with an A- (80%) or better average. Their background training must be sufficient for advanced work in their chosen field. Applicants from a university in which English is not the primary language of instruction must present evidence of competency to pursue studies in the English language prior to being extended an offer. In this regard, minimum acceptable TOEFL scores are 570 (paper), 230 (computer), and 86 (internet).

### **Program requirements**

The M.Sc. degree requires a research based thesis (18 credits) and completion of 13 credits of coursework with a B+ (76%) average or better. The required Chemistry Seminar provides 1 credit and the remaining 12 credits may be obtained from an array of courses.



## UBC Curriculum Proposal Form Change to Course or Program

<b>Faculty:</b> I. K. Barber School <b>Department:</b> Chemistry/Unit 3 <b>Faculty Approval Date:</b>  <b>Effective Session</b> <u>Winter</u> <b>Term</b> <u>2</u> <b>Year</b> <u>2007</u> <b>for Change</b>	<b>Date:</b> Aug. 29 2006 <b>Contact Person:</b> David Jack <b>Phone:</b> 250-807-8747 <b>Email:</b> david.jack@ubc.ca
<b>Proposed Calendar Entry:</b>  <b>CHEM 503 (3) Equilibrium Statistical Mechanics in Chemistry [3,0,0]</b>  Introductory principles of Statistical Mechanics with illustrations of chemical importance. Applications to molecular gases, liquids, solids, independent particle statistics, electric and magnetic moments, radiation, chemical equilibrium and reaction rates. Credit will not be given for CHEM 503 and CHEM 407 or CHEM 422 when on the same topic.	<b>Present Calendar Entry:</b> None  <b>Type of Action:</b> Create a new course  <b>Rationale:</b> The course is proposed in support of the creation of a graduate degree program in Chemistry
<b>Proposed Calendar Entry:</b> <b>CHEM 507 (3) Topics in Physical Chemistry [3,0,0]</b> Seminar presentation required based on current literature in the field. Credit will not be given for both CHEM 507 and CHEM 422 on the same topic.	<b>Present Calendar Entry:</b> none  <b>Type of Action:</b> create a new course  <b>Rationale:</b> The course is proposed in support of the creation of a graduate degree program in Chemistry
<b>Proposed Calendar Entry:</b> <b>CHEM 521 (3) Topics in Inorganic Chemistry [3,0,0]</b> Seminar presentation required based on current literature in the field. Credit will not be given for both CHEM 521 and CHEM 422 on the same topic.	<b>Present Calendar Entry:</b> none  <b>Type of Action:</b> create a new course  <b>Rationale:</b> The course is proposed in support of the creation of a graduate degree program in Chemistry
<b>Proposed Calendar Entry:</b> <b>CHEM 524 (3) Organometallic Catalysts[3,0,0]</b>	<b>Present Calendar Entry:</b> none  <b>Type of Action:</b> create a new course



<p>An advanced course describing selected recent developments in catalytic applications of organo-transition metal chemistry. Credit will not be given for both CHEM 524 and CHEM 422 on the same topic.</p>	<p><b>Rationale:</b> The course is proposed in support of the creation of a graduate degree program in Chemistry</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>CHEM 533 (3) Bioanalytical Chemistry [3,0,0]</b></p> <p>Chemical analysis of biological samples. Metabolomics, proteomics, sample interactions and matrix effects.</p>	<p><b>Present Calendar Entry:</b></p> <p>None</p> <p><b>Type of Action:</b></p> <p>Create a new course</p> <p><b>Rationale:</b></p> <p>The course is proposed in support of the creation of a graduate degree program in Chemistry</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>CHEM 534 (3) Chromatography and Mass Spectrometry [3,0,0]</b></p> <p>Gas, liquid and supercritical fluid chromatography. Mass spectrometry: ionization processes, mass analyses, ion molecule reactions, fragmentation processes. [3-0-0]</p>	<p><b>Present Calendar Entry:</b></p> <p>None</p> <p><b>Type of Action:</b></p> <p>Create a new course</p> <p><b>Rationale:</b></p> <p>The course is proposed in support of the creation of a graduate degree program in Chemistry</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>CHEM 535 (3) Topics in Analytical Chemistry [3,0,0]</b></p> <p>Seminar presentation required based on current literature in the field. Credit will not be given for both CHEM 535 and CHEM 422 on the same topic.</p>	<p><b>Present Calendar Entry:</b> none</p> <p><b>Type of Action:</b> create a new course</p> <p><b>Rationale:</b> The course is proposed in support of the creation of a graduate degree program in Chemistry</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>CHEM 540 (1) Graduate Seminar in Chemistry [2,0,0]</b></p> <p>Students present a present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their</p>	<p><b>Present Calendar Entry:</b> none</p> <p><b>Type of Action:</b> create a new course</p> <p><b>Rationale:</b> The course is proposed in support of the creation of a graduate degree</p>



previous or current research projects. Students will be assessed on their seminar and a related written paper.	program in Chemistry
<b>Proposed Calendar Entry:</b>  CHEM 549 (18) M.Sc. Thesis	<b>Present Calendar Entry:</b> None  <b>Type of Action:</b> Create a new course  <b>Rationale:</b> The course is proposed in support of the creation of a graduate degree program in Chemistry
<b>Proposed Calendar Entry:</b> <b>CHEM 568 (3) Topics in Organic Chemistry [3,0,0]</b> Seminar presentation required based on current literature in the field. Credit will not be given for both CHEM 568 and CHEM 422 on the same topic.	<b>Present Calendar Entry:</b> none  <b>Type of Action:</b> create a new course  <b>Rationale:</b> The course is proposed in support of the creation of a graduate degree program in Chemistry
<b>Proposed Calendar Entry:</b> <b>CHEM 569 (3) Advanced Mechanistic Enzymology [3,0,0]</b>  The chemistry of enzyme active sites, cofactors and inhibitors will be discussed. Enzyme kinetics, thermodynamics, kinetic isotope effects, and other physical methods will also be covered in detail. Credit will be given for only one of CHEM 569 and CHEM 413	<b>Present Calendar Entry:</b> none  <b>Type of Action:</b> create a new course  <b>Rationale:</b> The course is proposed in support of the creation of a graduate degree program in Chemistry
<b>Proposed Calendar Entry:</b>  CHEM 649 (0) Ph.D. Thesis	<b>Present Calendar Entry:</b> None  <b>Type of Action:</b> Create a new course  <b>Rationale:</b> The course is proposed in support of the creation of a graduate degree program in Chemistry



## UBC Curriculum Proposal Form Change to Course or Program

### Category: 1

<p><b>Faculty: IKB School of Arts &amp; Sciences</b> <b>Unit: Mathematics, Statistics and Physics (Unit 5)</b> <b>Faculty Approval Date: February 19, 2007</b> <b>Effective Session Winter Term 1 Year 2007 for Change</b></p>	<p><b>Date: 2007.02.02</b> <b>Contact Person: Heinz Bauschke</b> <b>Phone: (250) 807-8529</b> <b>Email: heinz.bauschke@ubc.ca</b></p>
<p>Proposed Calendar Entry:</p> <p><b>Mathematics</b> <i>Degrees Offered: M.Sc., Ph.D.</i></p> <p><b>Program Overview</b></p> <p>The Mathematics Graduate Program offers students the research-based degrees of Master of Science in Mathematics, and Doctor of Philosophy in Mathematics. Research interests of Mathematics faculty members include Mathematical Biology and Differential Equations, Optimization and Analysis, and Number Theory and Algebra.</p> <p><b>Master of Science</b></p> <p><b>Admission Requirements</b></p> <p>The program is governed by the regulations of the University of British Columbia Okanagan College of Graduate Studies, including its standards for admission of students.</p> <p>Students entering the M.Sc. program will normally have an honours degree or a bachelor's degree in mathematics with at least a B+ (76% or greater) average.</p> <p>Applicants from a university outside Canada in which English is not the primary language of instruction must present evidence of competency to pursue studies in the English language prior to being extended an offer of admission. Students can demonstrate English language proficiency with: the TOEFL (Test of English as a Foreign Language) minimum score of 600 [paper version] or 250</p>	<p><b>URL:</b> (URL from the current web Calendar – not the draft calendar. This URL is not needed if you are only making changes to existing content - for course entries simply list the course number.)</p> <p><b>Present Calendar Entry:</b> none</p> <p><b>Type of Action:</b> New Programs</p> <p><b>Rationale:</b> This calendar description sets out the nature of degrees available and the admission requirements. See also the attached supporting documentation.</p>





[computer version] or 100 [internet version]; the IELTS (International English Language Testing Service) minimum overall band score of 7.0 with no other component score less than 6.5); or a MELAB score of at least 84.

Students are encouraged to contact the program prior to applying to discuss their admission.

### **Program Requirements**

In addition to the general academic regulations for graduate students set out in the College of Graduate Studies Academic Regulations Chapter VII, the minimum requirements for the M.Sc. are:

- 12 credits for a successfully defended Master's thesis [MATH 549];
- 3 credits for seminar presentations [MATH 5xx taken thrice];
- 9 course credits selected by the student in consultation with – and approval of – the advisory committee and the program committee from a list of core courses in Mathematical Biology and Differential Equations, Optimization and Analysis, and Number Theory and Algebra;
- 6 other credits selected by the student in consultation with, and approval of, the advisory committee and the program committee none of which may be at the 100, 200 or 300 level.

### **Doctor of Philosophy**

#### **Admission Requirements**

The program is governed by the regulations of the University of British Columbia Okanagan College of Graduate Studies, including its standards for admission of students. Students admitted to the Ph.D. degree program normally must possess a M.Sc. in Mathematics or a related area with a B+ (76%) average or better in their M.Sc. coursework and thesis, with clear evidence of research ability or potential. Exceptional students may be admitted directly to the Ph.D. program with only an Honours degree.

Transfer from the M.Sc. to the Ph.D. program is permitted at the discretion of the program under regulations set by the College of Graduate Studies after 12, but after no more than 18, months in the M.Sc. program.

Applicants from a university outside Canada in



which English is not the primary language of instruction must present evidence of competency to pursue studies in the English language prior to being extended an offer of admission. Students can demonstrate English language proficiency with: the TOEFL (Test of English as a Foreign Language) minimum score of 600 [paper version] or 250 [computer version] or 100 [internet version]; the IELTS (International English Language Testing Service) minimum overall band score of 7.0 with no other component score less than 6.5); or a MELAB score of at least 84.

Students are encouraged to contact the program prior to applying to discuss their admission.

### **Program Requirements**

In addition to the general academic regulations for graduate students set out in the College of Graduate Studies Academic Regulations Chapter VII, the minimum requirements for the Ph.D. are

- 30 credits of coursework [course credits obtained for the M.Sc. may count towards this requirement];
- a written qualifying examination during the first two years, and a subsequent oral qualifying examination;
- 6 credits of coursework per year until the oral qualifying examination is passed;
- a successfully defended doctoral thesis [MATH 649].

Additional requirements may be established by the student's advisory committee and the program committee. For more information regarding the comprehensive examination and thesis, please refer to the College of Graduate Studies Academic Regulations in Chapter VII.

### **Contact Information**

-Insert here

**UBC Curriculum Proposal Form  
Change to Course or Program****Category: 1**

<b>Faculty:</b> I.K. Barber School, UBCO <b>Department:</b> Mathematics (Unit 5) <b>Faculty Approval Date:</b> February 19, 2007 <b>Effective Session:</b> <u>Winter</u> <b>Term:</b> <u>1</u> <b>Year</b> <u>2007</u> <b>for Change</b>	<b>Date:</b> February 7, 2007 <b>Contact Person:</b> Heinz Bauschke <b>Phone:</b> 250-807-8529 <b>Email:</b> heinz.bauschke@ubc.ca
<b>Proposed Calendar Entry:</b>  <b>MATH 549 (12) Thesis for Master's Degree</b>	<b>URL:</b> N/A <b>Present Calendar Entry:</b> None <b>Type of Action:</b> Create a new course  <b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.  [This course exists at UBCV.]
<b>Proposed Calendar Entry:</b>  <b>MATH 649 (0) d Ph.D. Thesis</b>	<b>URL:</b> N/A <b>Present Calendar Entry:</b> None <b>Type of Action:</b> Create a new course  <b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.  [This course exists at UBCV.]
<b>Proposed Calendar Entry:</b>  <b>MATH 5gg (1-3) c Mathematics Graduate Seminar</b>  Presentation and discussion of recent results in the mathematical literature. Credit may be obtained more than once. [0,0,1]	<b>URL:</b> N/A <b>Present Calendar Entry:</b> None  <b>Type of Action:</b> Create a new course  <b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.  [This course exists at UBCV.]



<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 620 (2-15) c Directed Studies in Mathematics</b></p> <p>Advanced study under the direction of a faculty member may be arranged in special situations.</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.</p> <p>[This course exists at UBCV.]</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 5bb (3) Mathematical Biology</b></p> <p>Mathematical methods in modeling biological processes, at levels from cell biochemistry to community ecology. [3,0,0]</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.</p> <p>[This course can initially be cross-taught with a new Mathematical Biology Undergrad course.]</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 5aa (3) Methods and Applications of Partial Differential Equations</b></p> <p>Theory of partial differential equations and their solutions. Classical linear equations: the Laplace equation, heat equation, and wave equation. Green's functions, conformal mapping, and traveling waves. Numerical Methods. [3,0,0]</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.</p> <p>[This course can initially be cross-taught with the replacement of DE II]</p>



<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 605 (2-15) c Topics in Applied Mathematics</b></p> <p>Topics will be chosen from different areas of applied mathematics. Content will be determined so as to complement course offerings and meet the needs of the students. Credit for this course may be obtained more than once.</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.</p> <p>[This course exists at UBCV.]</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 612 (2-15) c Topics in Mathematical Biology</b></p> <p>This course will allow students to explore topics in mathematical biology outside of the core offerings. Topics will depend on student demand and instructor availability. Credit for this course may be obtained more than once.</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.</p> <p>[This course exists at UBCV.]</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 523 (3) Combinatorial Optimization</b></p> <p>Theory of the nature of problems from combinatorial optimization; solution techniques and theory; topics from integer programming, network flows, and matroids. [3,0,0]</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.</p> <p>[This course exists at UBCV]</p>



<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 5xx (3) Convex Optimization and Nonsmooth Analysis</b></p> <p>Separation and support properties of convex sets; polar, tangent, and normal cones; Fenchel conjugation; subgradient calculus for convex functions; Fenchel duality for convex optimization problems; algorithms for non-differentiable optimization; nonsmooth analysis and optimization for nonconvex objects. [3,0,0]</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.</p> <p>[This course can initially be taught with MATH 461]</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 5yy (1-3) c Optimization and Analysis I</b></p> <p>Topics from Optimization and Analysis that are particularly relevant for beginning graduate students at the Master's level. [0,0,3]</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.</p> <p>[This course is team-taught as a seminar course]</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 6yy (1-3) c Optimization and Analysis II</b></p> <p>Topics from Optimization and Analysis that are particularly relevant for Master's students nearing completion of their program as well as beginning Ph.D. students. [0,0,3]</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.</p> <p>[This course is team-taught as a seminar course]</p>
<p><b>Proposed Calendar Entry:</b></p>	<p><b>URL:</b> N/A</p>



<p><b>MATH 601 (2-15) c Topics in Analysis</b></p> <p>Topics, which depend on the students' background and requirements and on the instructor, are drawn from functional analysis, measure and integration theory, non-smooth analysis and variational analysis.</p>	<p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.</p> <p>[This course exists at UBCV.]</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 604 (2-15) c Topics in Optimization</b></p> <p>Advanced theoretical, algorithmic, or computational topics in optimization chosen by the instructor. Topics in the theory of optimization may include: non-smooth optimization and analysis in infinite-dimensional spaces; monotone operators; subgradient calculus for non-convex functions; semidefinite programming. Algorithms considered may include: interior point methods, projection and other non-differentiable algorithms. Computational topics may include: Complexity of optimization algorithms; practical overview of optimization solvers for continuous and discrete problems; numerical and symbolic computation of Fenchel conjugates.</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.</p> <p>[This course exists at UBCV. It can initially be team taught.]</p>



<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 600 (2-15) c Topics in Algebra</b></p> <p>Topics chosen from group theory, rings and modules, Galois theory, commutative rings, categorical algebra, representations of finite groups, and other topics.</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics</p> <p>[This course exists at UBCV. Can be offered jointly with MATH 432.]</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 538 (3) Algebraic Number Theory</b></p> <p>Ring localizations, integral elements, prime and maximal ideals, Dedekind domains, unique factorization of ideals, algebraic number fields, integral bases, discriminants, norms, class number. [3,0,0]</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics</p> <p>[This course exists at UBCV.]</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 539 (3) Analytic Number Theory</b></p> <p>Properties of arithmetic functions. Average values, densities, analytic properties of the zeta function, formula for the <math>n</math>th prime, Prime Number Theorem, Dirichlet characters, Prime Number Theorem for arithmetic progressions. [3,0,0]</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics</p> <p>[This course exists at UBCV.]</p>





<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 5ee (3) Theory of Error-Correcting Codes</b></p> <p>Fundamental concepts of communication and coding theory; major types of codes currently used in applications and the mathematical techniques needed to develop them; recent developments in coding theory and the connection between codes and other mathematical objects. [3,0,0]</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics.</p> <p>[Can be offered jointly with MATH 433.]</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>MATH 610 (2-15) c Topics in Pure Mathematics</b></p> <p>Topics chosen will depend on the instructor. These may include algebraic number theory, group representation theory, analytic number theory, category theory, combinatorics or algebraic topology.</p>	<p><b>URL:</b> N/A</p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> Create a new course</p> <p><b>Rationale:</b> The course is proposed in support of a graduate degree program in Mathematics</p> <p>[This course exists at UBCV.]</p>



## UBC Curriculum Proposal Form Change to Course or Program

**Category:**

<b>Faculty: Education</b> <b>Unit:</b> <b>Faculty Approval Date: August 2006</b> <b>Effective Session __ Winter__ Term __I__</b> <b>Year __2007__ for Change</b>	<b>Date: February 2, 2007</b> <b>Dean: Robert Campbell</b> <b>Contact Person: Sharon McCoubrey</b> <b>Phone 807-8109</b> <b>Email: Sharon.mccoubrey@ubc.ca</b>
<b>Proposed Calendar Entries:</b>  <b>Faculty of Education Developmental Standard Teaching Certificate in Okanagan Language and Culture.</b>  <b>Admissions Requirements</b> <ul style="list-style-type: none"> <li>• A grade point average of at least 65% in the following attempted credits:</li> <li>• 6 credits of approved English</li> <li>• 6 credits of Canadian Studies</li> <li>• 3 credits Math<sup>1</sup></li> <li>• 3 credits Science<sup>1</sup></li> <li>• 54 credits of Okanagan Language and Culture courses, and Indigenous Studies courses.</li> </ul> <p><sup>1</sup>The Math and Science credits may be deferred as this certificate will restrict teaching to only Okanagan Language and Culture courses. Deferred credits must be completed prior to completion of a Permanent Teaching Certificate or a B.Ed. degree.)</p> <b>Education Courses:</b>  <b>EDUC 406 (6) Indigenous Language Teacher Education Module, Culture of Education</b> Integrated studies module consisting of the following Seminars: The Developing Learner (2) Social and Cultural Issues in Education (2) Learning Difficulties (2) Introduction to education through seminars and colloquia that provide foundational knowledge in the psychological, socio-cultural, and philosophical and historical underpinnings of	<b>Present Calendar Entry:</b> n/a  <b>Type of Action:</b> The establishment of a Developmental Standard Teaching Certificate Program in Okanagan Language and Culture.  <b>Rationale:</b> It is essential that the Okanagan Language be taught in order to ensure that the language thrives. There are few Aboriginal teachers certified to teach the Okanagan language.  The Developmental Standard Teacher Certificate allows teachers to obtain certification in an expedient manner. Those students obtaining the DSTC will be restricted to teaching only Okanagan language and culture courses.  With additional coursework, the DSTC can eventually be converted to a Permanent Teaching Certificate and Bachelor of Education Degree. (This is still under development)



education. Registration limited to students in the B.Ed. DSTC program.

**EDUC 474 (3) Methods in Aboriginal Language Education**

Examines theory and practice of teaching a language. Instructional strategies, evaluation requirements and processes, curriculum planning, classroom management, and other factors related to teaching a language in a classroom setting. Registration limited to students in the B.Ed. DSTC program.

**EDUC 412 (4) Indigenous Language Teacher Education Module Culture of the School**

Integrated studies module consisting of the following Seminars

Educational Policy and Administration (2)

Instructional Design: Planning and Evaluation (2)

School operations including the legislative and administrative aspects of the school and the overall school culture. Seminar work in instructional design is provided to prepare students for their practicum teaching experience. Registration limited to students in the B.Ed. DSTC program.

**EDUC 422 Context Studies: Learning Communities Practicum (10)**

Becoming a practicing professional is explored in this practice teaching experience. An eight-week practice teaching experience will take place in an aboriginal language context. The practicum follows one week of conferring and preparing with sponsor teachers and



supervisors.

Prerequisites: Registration limited to students in the B.Ed. DSTC program.