

LING 585 Principles of Translation (3 sem. hrs.)

This course covers the theory and practice of translating from a source language to a target language. It is designed to give the student the necessary skills for transferring meaning from one language to another. Discussion includes source language, target language, and cross-language transfer, with particular attention to the translation of Scripture. (0-0; 3-0)

LING 586 Advanced Phonology (3 sem. hrs.)

This course introduces students to advanced concepts of phonological theory. Employing the theoretical models they are learning, students develop a clearer understanding of the typological behavior of phonological systems by analyzing data from a variety of languages. Students are also taught how to integrate insights from phonological theory into the development of practical orthographies. (0-0; 3-0)

LING 590 Philosophy of Language (3 sem. hrs.)

This course examines a range of topics within philosophy of language. There is an overview of several works considered classics in the field (e.g., Wittgenstein, Quine, Searle, Alston, Grice), as well as critical review of major schools of thought in regard to language and criticism. Insights from linguistics and related disciplines, including textlinguistics and sociolinguistics, are considered in evaluating the schools of thought. (0-0; 3-0)

LING 611 Applied Phonology for TESOL (3 sem. hrs.)

This course examines a wide range of more advanced applications for phonological and phonetic frameworks. In addition to methods for teaching and integrating pronunciation in language teaching for several learner populations, from basic articulation training to discourse-level pronunciation instruction, students study relevant techniques from a number of academic disciplines which deal with relationships between speech, voice, body movement, and emotion. (Summer)

LING 612 Research Methods in Applied Linguistics (3 sem. hrs.)

This course develops student understanding of quantitative and qualitative research methods and familiarize them with research issues and statistics related to applied linguistics. In addition, students are guided through the methodology of action research and the process of topic choice for the Major Project (to be done in the internship). (Summer)

LING 650 Survey of Linguistic Theories (3 sem. hrs.)

This course introduces students to a wide range of linguistic theories. Students read and discuss original works written from various perspectives and gain in the process a clearer appreciation for the range of views that exist concerning the nature of human language and its syntactic, semantic, phonological, and discourse properties. Prerequisites: LING 560, LING 586. (3-0; 0-0)

LING 660 Problems in Morphology and Syntax (3 sem. hrs.)

This course continues to explore the various morphological and syntactic structures found in the world's languages. In addition to further study of topics previously introduced in LING 560 (Syntax and Semantics), students also examine features such as: inflection, derivation, and compounding; deixis; grammaticalization; and non-declarative speech acts. The emphasis is on solving problems that arise in data from a variety of language families and types. Students apply the course discussion to the preparation of a linguistic paper. Prerequisite: LING 560. (0-0; 3-0)

LING 680 Advanced Field Methods: Analysis and Writing (3 sem. hrs.)

Students analyze a non-Indo-European language by working extensively with a native speaker. A major focus in the course is on developing descriptive writing skills. Prerequisites: LING 560, LING 580, LING 586. (3-0; 0-0)

LING 688 Tone Analysis (3 sem. hrs.)

This course introduces students to a methodology of tone analysis, incorporating the insights of current theoretical approaches. Students also learn to apply insights from the analysis of a tone system to developing practical orthographies. Prerequisite or Co-requisite: LING 586. (3-0; 0-0)

LING 691 Discourse Analysis (3 sem. hrs.)

This course teaches students to analyze the discourse structure and pragmatic features of texts. Students describe typical features of different types of prominence and cohesion, chart texts, analyze discourse segmented into hierarchical units, and indicate evidence for foregrounding and backgrounding (or mainline and supportive information). Emphasis is given to the interface between syntactic forms and their pragmatic functions in discourse. Prerequisite: LING 560 (0-0; 3-0)

LING 695 Topics in Linguistics: Readings in Tone Theory (Sample) (3 sem. hrs.)

This course exposes students to a wide variety of literature in the field of tone theory. There is a strong emphasis on reading and understanding foundational material in the discipline as well as becoming acquainted with some of the more recent literature. (3-0; 3-0)

LING 697 Linguistics Thesis I (3 sem. hrs.)

The student, in frequent consultation with his/her advisor, selects a thesis topic and writes a thesis proposal. Once the proposal has been accepted by the student's thesis advisory committee, he/she begins writing the thesis. There are no formal classes. Prerequisite or Co-requisite: LING 680. (3-0; 3-0)

LING 698 Linguistics Thesis II (3 sem. hrs.)

The student, in consultation with his/her advisor, works towards completion of the thesis. Upon completion, the thesis must be defended orally before an examining committee. There are no formal classes. Prerequisite: LING 697. (3-0; 3-0)

LING 699 Linguistics Continuing Registration (0 sem. hrs.)

Continuing Registration maintains the student's enrolment in the program and is taken only when all required courses are complete and only as a continuation of an incomplete thesis or graduating essay. Enrolment in Continuing Registration is automatic, and although no credit is given for it, a fee is charged for each semester of enrollment. (3-0; 3-0) *NB:* Additional 500-level Linguistics courses are part of the TESOL Graduate Program. See the TESOL, Graduate Courses section of this Calendar for course descriptions.

MATHEMATICS

MATH 101 Introduction to Mathematics for Business and Social Sciences (3 sem. hrs.)

Basic concepts in mathematics with applications in business and social sciences. Topics include linear systems, quadratics, sequences, exponential and logarithmic functions. Applications include compound interest, annuities, and linear programming. This course is not intended for students majoring in Science and may not be used for credit towards a major, concentration, or minor in Mathematics. It may, however, be required of some Science majors who are not ready for MATH 105.

NB: Most Business majors take MATH 101 prior to taking MATH 120 unless their high school credentials are excellent or the results of a pre-test indicate they may go directly to MATH 120. Science majors take a screening test during registration, and depending on the results, enrol in MATH 101, MATH 105, or directly in MATH 123. Students intending a Mathematics major whose screening test results indicate they should take MATH 101 or 105 before MATH 123 should be advised that they are unlikely

to finish the program in four years. Moreover, Mathematics courses numbered below 120 cannot be counted as part of the major; they must be counted as electives.

Prerequisite(s): At least a C in B.C. Principles of Mathematics 11 or equivalent. (4-0 or 4-0)

MATH 102 Introduction to Probability and Statistics (3 sem. hrs.)

Sets, permutations and combinations, probability, introduction to statistics. Not for credit towards a major, concentration, or minor in Mathematics.

NB: Credit may be received for only one of MATH 102 or MATH 108.

Prerequisite(s): At least a C in B.C. Principles of Mathematics 11 or equivalent. (0-0; 3-0)

MATH 105 Pre-Calculus Mathematics (3 sem. hrs.)

An introduction to the tools essential for the study of calculus. Topics include algebra, trigonometry, exponents, logarithms, functions, graphs, conics, and plane analytic geometry. This course is taken by Science majors whose screening test during registration indicates they are not ready to take MATH 123, but have reasonable mastery of MATH 101.

Prerequisite(s): At least a B in MATH 101 or B.C.

Principles of Mathematics 11 or equivalent. (4-0 or 4-0)

MATH 108 Statistics for Health Students (3 sem. hrs.)

This course is an introduction to applied statistics addressed, in particular, to students specializing in the field of nursing. The focus is on developing the conceptual aspects of the subject rather than the mathematical foundations and assumes no prerequisite except elementary algebra. Topics include descriptive statistics, probability, the normal, t -, chi-square and F-distributions, confidence intervals, hypothesis testing, correlation and regression. Applications are directed towards health and biological studies.

NB: Credit may be received for only one of MATH 102 or MATH 108.

Prerequisite(s): At least a C in B.C. Principles of Mathematics 11 or equivalent. (3-0 or 3-0)

MATH 120 Calculus for Social Sciences (3 sem. hrs.)

An introduction to the basic elements of calculus and its application to problems encountered particularly in economics and the social sciences. Topics include limits, derivatives and their applications, integration and its applications.

NB: Credit will be granted for only one of MATH 120 and MATH 123.

Prerequisite(s): At least a B in B.C. Principles of Mathematics 12 or equivalent, or MATH 101. (4-0 or 4-0)

MATH 123 Calculus I (3 sem. hrs.)

Functions, limits and continuity, derivatives and applications, integrals and applications.

NB: Credit will be granted for only one of MATH 120 and MATH 123.

Prerequisite(s): At least a B in B.C. Principles of Mathematics 12 or equivalent, or MATH 105. (4-0; 0-0)

MATH 124 Calculus II (3 sem. hrs.)

Transcendental functions, integration techniques, polar coordinates, sequences, series, and Taylor series.

Prerequisite(s): MATH 123 or an A in MATH 120 and the instructor's permission. (0-0; 4-0)

MATH 150 Introduction to Discrete Math (3 sem. hrs.)

This course introduces students to those branches of pure mathematics which are most commonly used in the study of Computing Science and/or have other practical applications. Topics include logic, proofs, switching circuits, set theory, induction, functions, languages, finite automata, combinatorics, and algebraic structures. This course may be taken by non-majors for non-lab science credit.

NB: Not offered every year. See Department chair.

Cross-listed: CMPT 150.

Prerequisite(s): B.C. high school Mathematics 12, or MATH 101, or the equivalent. (3-0 or 3-0)

MATH 190 Mathematics for Elementary Teachers (3 sem. hrs.)

Mathematical concepts and topics that undergird the school mathematics curriculum. The principles and applications of number systems, sets, equations, linear programming, geometry, and mathematical proof within a historical and societal context. It may not be used to meet a mathematics requirement in any other program.

NB: Credit is granted for only one of MATH 101, 102, 108, or 190. Open to declared Elementary Education majors only.

Education students may meet their requirement for a Mathematics course by substituting another course for MATH 190. Students planning to transfer to University of Victoria (and some other universities) for their professional year are required to take two Mathematics courses rather than one.

Prerequisite(s): At least a C in B.C. Principles of Mathematics 11 or equivalent. (4-0 or 4-0)

MATH 220 Analysis (3 sem. hrs.)

Sequences and induction; convergence of sequences and series; limits, continuity, and differentiability; Riemann integrals; sequences of functions.

NB: Not offered every year. See Department chair.

Prerequisite(s): MATH 124, 150 (3-0 or 3-0)

MATH 223 Calculus III (3 sem. hrs.)

Multivariate calculus. Topics include vectors, vector functions and derivatives; curves; partial and directional derivatives; Lagrange multipliers; double and triple integrals; spherical and cylindrical co-ordinates; vector integrals, Green's Theorem, surface integrals.

Prerequisite(s): MATH 124, 150. (3-0; 0-0)

MATH 250 Linear Algebra (3 sem. hrs.)

Systems of linear equations, matrices, determinants, vector spaces, linear transformations, eigenvalues and eigenvectors, diagonalization applications, linear programming.

Prerequisite(s): MATH 123. (3-0 or 3-0)

MATH 310 Probability and Statistics (3 sem. hrs.)

A study of the fundamental principles of mathematical statistics. Probability distributions and densities, expectation and moment-generating functions, functions of random variable, sampling distributions, estimation, hypothesis testing, regression and correlation, analysis of variance, nonparametric tests.

NB: May be taken concurrently with MATH 223. Not offered every year. See Department chair.

Prerequisite(s): MATH 223. (3-0 or 3-0)

MATH 320 Complex Analysis (3 sem. hrs.)

Functions of a complex variable; differentiation; analytic and elementary functions; Cauchy's theorem and contour integration; Taylor and Laurent series, residues and poles; conformal mapping. Emphasis is placed on physical applications.

NB: Not offered every year. See Department chair.

Prerequisite(s): MATH 223. (3-0 or 3-0)

MATH 321 Differential Equations I (3 sem. hrs.)

First order differential equations, linear differential equations, Laplace transforms, systems of differential equations, non-linear systems, series solutions, applications.

NB: Not offered every year. See Department chair.

Prerequisite(s): MATH 223, 250. (3-0; 0-0)

MATH 322 Mathematical Methods of Physics (3 sem. hrs.)

A study of more advanced methods for solving differential equations. Special emphasis is placed on applications in physics. Topics covered include linear systems, non-linear systems, phase planes and stability, partial differential equations, Fourier series, Bessel and Legendre series, Sturm-Liouville problems, and orthogonal series.

NB: Not offered every year. See Department chair.

Cross-listed: PHYS 322.

Prerequisite(s): MATH 321. (0-0; 3-0)

MATH 330 Numerical Analysis (3 sem. hrs.)

Numerical techniques for solving problems in applied mathematics. Error analysis, roots of equations, interpolation, numerical differentiation and integration, ordinary differential equations, matrix methods.
NB: Not offered every year. See Department chair.
 Cross-listed: CMPT 330.
 Prerequisite(s): MATH 223, 250; CMPT 140 or equivalent. (3-0 or 3-0)

MATH 340 Computing with Discrete Structures (3 sem. hrs.)

This course continues CMPT 150 and MATH 150. It also includes models of computation, formal languages and algorithms.
NB: Not offered every year. See Department chair.
 Cross-listed: CMPT 340.
 Prerequisite(s): CMPT 150 or MATH 150. (0-0; 3-0)

MATH 350 Operations Research (3 sem. hrs.)

Linear programming, duality, network analysis, queuing theory, inventory theory, dynamic programming, non-linear programming.
NB: Not offered every year. See Department chair.
 Cross-listed: CMPT 350.
 Prerequisite(s): Knowledge of a programming language, MATH 223, 250. (3-0 or 3-0)

MATH 370 Geometry (3 sem. hrs.)

Finite geometries, transformations, Euclidean geometry, constructions, inverse geometry, projective geometry, non-Euclidean geometry, introduction to topology.
NB: Not offered every year. See Department chair.
 Prerequisite(s): MATH 223, 250. (3-0 or 3-0)

MATH 380 Modern Algebra (3 sem. hrs.)

Linear algebra and matrix theory; abstract algebra including group, field, and ring theory; algebraic systems, polynomial theory; an introduction to number theory.
NB: Not offered every year. See Department chair.
 Prerequisite(s): MATH 150; 250. (0-0; 3-0)

MATH 400 Directed Studies in Mathematics (3 sem. hrs.)

Students are required to produce an outline of the topic to be studied in consultation with the instructor. A course of reading and/or research is pursued according to the approved outline. Assessment may be via examination and/or a final written report.
NB: This course with the appropriate choice of topics can be used as a preparation for the senior thesis (MATH 410).
 Prerequisite(s): Advanced standing in Mathematics or instructor's consent.

MATH 409 Thesis Preparation (1 sem. hr.)

Students are required to choose a topic for their senior thesis (MATH 410) in consultation with an instructor. Selected readings and references pertinent to the topic are assigned. A final written report is presented consisting of a detailed thesis proposal and a review of the literature.
 Prerequisite(s): Advanced standing in Mathematics or instructor's consent.

MATH 410 Senior Thesis (2 sem. hrs.)

Research in a chosen area of mathematics with a final written report.
NB: Normally 2 sem. hrs. are assigned unless arrangements are made with the Department chair.
 Prerequisite(s): MATH 409, a related directed study in preparation, or instructor's consent.

MATH 411 Senior Thesis (3 sem. hrs.)

Research in a chosen area of mathematics with a final written report.
NB: Normally 2 sem. hrs. are assigned unless arrangements have been made with the Department chair.
 Prerequisite(s): MATH 409, a related directed study in preparation, or instructor's consent.

MATH 420 Topics in Applied Mathematics (3 sem. hrs.)

Possible topics could include mathematical models of social and natural phenomena, linear programming, applied mathematics in physics and astronomy, etc.
NB: Not offered every year. See Department chair. Entry restricted to third and fourth year students who meet the prerequisites for the topic to be offered. (3-0 or 3-0)

MATH 430 Numerical Analysis II (3 sem. hrs.)

Numerical solution of systems of equations, eigenvalues, approximation theory, non-linear systems, boundary-value problems, numerical solution of partial differential equations.
NB: Not offered every year. See Department chair.
 Cross-listed: CMPT 430.
 Prerequisite(s): CMPT/MATH 330. (3-0 or 3-0)

MATH 440 The Theory of Numbers (3 sem. hrs.)

A study of the ideas of classical number theory from the early Greek mathematicians through the European contributions of the 17th century to modern times. Topics include divisibility and primes, modular arithmetic, primality tests, primitive roots, quadratic reciprocity, Diophantine equations, continued fractions.
NB: Not offered every year. See Department chair.
 Prerequisite(s): Third year standing and one or more of MATH 340, 370, or 380, or a course in abstract algebra or analysis at the third year level from another university, or instructor's consent. (3-0 or 3-0)

MATH 480 Foundations of Mathematical Sciences (3 sem. hrs.)

A study of basic issues in the history and philosophy of mathematics and physics. Topics include logic, infinity, Godel's theorems, time, space, determinism, the nature of mathematical and scientific truth, the ontological status of theoretical entities, implications of relativity, quantum mechanics, and modern cosmology. Particular attention is paid to philosophical/theological presuppositions, implications, and applications in the mathematical sciences.
NB: This course meets the University's upper level IDIS core requirement. In combination with NATS 490, it meets the Faculty of Natural and Applied Sciences' Interdisciplinary Studies core requirement. Not offered every year. See Department chair.
 Prerequisite(s): Third year standing, including 9 sem. hrs. in Mathematics, Physics, or Philosophy. (3-0 or 3-0)

MUSIC

MUSI 100 Repertory and Studio Class (0 sem. hrs.)

A performance class for students of applied music for the purpose of gaining experience in public performance and increasing knowledge of music literature. Required of all Music majors in each semester of the program; recommended for all other students registered for applied music lessons.
NB: Pass/Fail course.
 Prerequisite(s): None. (0-1; 0-1)

MUSI 110 Fundamentals of Music (3 sem. hrs.)

A course for teachers, youth workers, and recreation workers, as well as students who wish to pursue advanced theory studies but lack the appropriate background. Some topics covered: notation of pitch and rhythm, intervals, scales and modes, concept of key, triads and seventh chords, introductory melody, and accompaniment writing.
 Prerequisite(s): None. (3-0 or 3-0)

MUSI 131, 132 Music History from 1600 to Present (3, 3 sem. hrs.)

A study of music styles, forms, and composers from 1600 to the present day. This encompasses an evaluation of baroque, classical, and romantic music as well as significant trends and developments in the 20th century.
 Prerequisite(s): Satisfactory performance on the music placement test or MUSI 110; MUSI 110 may be taken concurrently. (3-0; 3-0)