

Instruction offered by members of the Faculty of Kinesiology.

Students should also see course listings under the headings Dance Education, Dance Education Activity/Theory, Outdoor Pursuits, Outdoor Pursuits Activity/Theory, Physical Education, and Physical Education Activity/Theory.

J n C s s

Kinesiology 201 H(1-3)

Activity: Essence and Experience

Experience in various activities and movement patterns and the study of the fundamental factors that influence the activities we choose and the way we move.

Kinesiology 203 H(1-3)

Activity: Health and Performance

A variety of activities to experience the short-term benefits of exercise.

Note: Students are responsible for completing Par-Q Activity Readiness questionnaire, and medical clearance if required

Kinesiology 211 H(2-1)

Leadership and Communication

The study and application of knowledge, skills, and abilities which contribute to effective leadership and communication in kinesiology.

Kinesiology 213 H(2-1)

Communication: The Analytical Process

An introduction to communication in kinesiology using the critical thinking process, including basic statistical knowledge. Practical application of concepts through direct involvement in individual and group projects.

Prerequisite or Corequisite: Kinesiology 211.

Note: Open to Pedagogy Majors only. Students must consult with the Pedagogy Coordinator in order to obtain required documentation to comply with the legal requirements for placement in schools.

NOT INCLUDED IN GPA

Kinesiology 493 **H(3-0)**

Physiology of Health and Physical Activity

The quality and extent of research supporting the relationships between health, disease, regular physical activity, and fitness.

Prerequisite: Kinesiology 473.

Kinesiology 495 **H(3-0)**

Physiological Aspects of Aging, Disease, and Physical Activity

An examination of the interaction between aging, age-associated disease (e.g., cardiovascular disease) and physical activity. The major emphasis will be on the physiological processes involved.

Prerequisites: Kinesiology 355 and 473.

Kinesiology 497 **H(3-0)**

Canadian Sport History

The sources and development of sporting activity in Canadian society.

Kinesiology 503 **H(3-0)**

Special Topics in Kinesiology

An examination of selected special topics in kinesiology and related subjects.

Prerequisite: Consent of the Faculty.

MAY BE REPEATED FOR CREDIT

Kinesiology 569 **H(3-1)**

Rehabilitation Through Recreational Activities

Issues of planning and implementing recreation, health, and wellness programs for persons with disability including advocacy, planning principles, creativity, learning techniques, and teamwork.

Prerequisite: Admission to the BCR program or Kinesiology 367.

Kinesiology 591 **H(0-4)**

Practicum

Prerequisite: Consent of the Faculty.

MAY BE REPEATED FOR CREDIT

Kinesiology 593 **H(0-4)**

Senior Practicum

Prerequisite: Consent of the Faculty.

MAY BE REPEATED FOR CREDIT

NOT INCLUDED IN GPA

Graduate Seminars

Kinesiology 601 **H(3S-0)**

Graduate Seminar

Seminar discussion and critique on current research in human physical activity and related subjects.

Prerequisite: Consent of the Faculty.

Kinesiology 603 **H(3-0)**

Special Topics

Intensive study of selected topics in human physical activity and related subjects.

Prerequisite: Consent of the Faculty.

MAY BE REPEATED FOR CREDIT

Kinesiology 605 **H(4T-8)**

Practicum

Prerequisite: Consent of the Faculty.

Note: Open to Exercise and Functional Fitness students only. If this choice is made, the student must select another approved graduate level half-course option.

MAY BE REPEATED FOR CREDIT

NOT INCLUDED IN GPA

Kinesiology 607 **H(0-3T)**

Project

Students will identify, address, and resolve problems relating to their specialty. The project will be completed under the direction of a supervisor. A final report in a format appropriate to the nature of the project will be required.

Prerequisite: Consent of the Faculty.

Kinesiology 611 **H(3-1)**

Research Methods and Design in Sport and Fitness

The research process including study design; data collection, analysis and interpretation; and critical assessment from the literature in the field of coaching and exercise science.

Prerequisite: Consent of the Faculty.

Kinesiology 637 **H(3-0)**

Nutrition for Physically Active Populations

The nutritional requirements of specific athletic and/or physically active groups such as cardiac rehabilitation patients and child athletes.

Prerequisite: Consent of the Faculty.

Kinesiology 643 **H(3S-0)**

Selected Topics in Sport and Fitness Management

An examination of the managerial role in selected sport and fitness situations.

Prerequisite: Consent of the Faculty.

MAY BE REPEATED FOR CREDIT

Kinesiology 651 **H(3S-0)**

Cognitive Science: Vision and Motor Behaviour

An exploration of research in cognitive science, vision, and eye movement as these areas relate to motor learning and performance with particular attention to the development of motor expertise, in both normal and atypical populations.

Prerequisite: Kinesiology 251 and 253 or 250 or equivalent.

Kinesiology 653 **H(3-0)**

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A collaborative offering of the Faculties of Communication and Culture, Humanities and Social Sciences. For information contact the Program Director or 220-6343.

Additional interdisciplinary courses are offered under the course headings African Studies, Canadian Studies, Central and East European Studies, Communications Studies, Development Studies, East Asian Studies, General Studies, Law and Society, Leisure, Tourism and Society, Museum and Heritage Studies, Northern Planning and Development Studies, Science, Technology and Society, South Asian Studies, Urban Studies, and Women's Studies.

J n C s s

Latin American Studies 201 H(3-0)

Introduction to Cultural and Historical Roots of Latin America

An interdisciplinary survey of important themes providing a background for understanding Latin America, the physical landscape, prehistory, Iberian influence, and historical development to independence.

Latin American Studies 203 H(3-0)

Introduction to Contemporary Latin America

An interdisciplinary survey of important themes for understanding contemporary Latin America. Indigenous cultures, contemporary cultures and societies, political trends, modern history, demography and settlement patterns, natural resources and economic development and literature.

S n C s s

Latin American Studies 301 H(0-3)

Field Study in Latin America

An experiential learning course, designed to provide a framework for the student's empirical learning experience during the Latin American Studies Field School. Provides a forum for the sharing of cross-cultural experiences among the students, as they analyze and reflect on the realities of life in Latin America. Students will be expected to live with a local family during the Field School, to take an active part in discussions, and to participate in events and field trips.

Note: Normally offered during the Spring or Summer Sessions.

NOT INCLUDED IN GPA

Latin American Studies 303 H(3-0)

Latin American Field Research

In a Latin American field setting, this course guides students in integrating their own observations and experiences with scholarly readings on themes of relevance and importance to the particular setting. Attention is paid to the archaeological and historical contexts as well as present day economic, political, and social issues of Latin America. The regional and theoretical focus of the material will vary according to the location at which the course is given.

Note: Normally offered during the Spring or Summer Sessions.

Latin American Studies 401 H(3S-0)

Integrative Seminar in Latin American Studies

An advanced seminar involving research on a special Latin American topic integrating a variety of disciplinary and interdisciplinary perspectives (eg.

political science, anthropology, geography, cultural studies).

Prerequisites: Latin American Studies 201, 203 and third year standing or consent of the Associate Dean (Student Affairs and Curriculum).

Note: May not be offered every year. May be taken as a reading course if an instructor is available.

Latin American Studies 501 H(3-0)

Directed Study in Latin American Studies

Students devise a research question and carry out a program of independent research with a specialist on a topic in the area of Latin American Studies.

Prerequisites: Third year standing and consent of the Director.

MAY BE REPEATED FOR CREDIT

Instruction offered by members of the Faculty of Law.

F s Y a C

All courses are compulsory.

Law 400 F(3-0)(5 credits)

Constitutional Law

The basic elements of Canadian constitutional law. The nature of constitutions and constitutional processes; principles of constitutional interpretation; constitutional amendment; Federal-Provincial distribution of legislative powers including the federal general power, natural resources and public property, provincial property and civil rights, trade and commerce, provincial taxation, transportation, communications, and criminal law; the Canadian Charter of Rights and Freedoms including principles of limitation, remedies, interpretation, application, fundamental freedoms, democratic and language rights, mobility rights, legal rights, equality rights, and aboriginal people's rights.

Law 401 H(2-0)(2 credits)

Legal Perspectives

An introduction to legal and judicial reasoning. An examination of various legal theories including natural law, positivist, Realist, liberal, feminist and other legal perspectives.

Law 402 F(3-0)(5 credits)

Contracts

A legal and policy analysis of the basic principles and fundamental concepts of the law of contracts as they relate to commercial and consumer transactions. The formation of contracts including offer and acceptance, and consideration; estoppel; privity; terms of contract, including exemption clauses; standard form contracts; bailment; mistake, misrepresentation and unconscionability; termination, including the doctrine of frustration; breach and remedies for breach; dispute resolution processes. Emphasis is placed not only on a knowledge of rules and principles, their historical derivation, rationale, efficacy and social validity, but also upon their creative use to both avoid and resolve disputes.

Law 403 H(3-0)(3 credits)

Legislation, Administration and Policy

The fundamentals of the legislative process: policy development, legislative drafting, public bill process, statutory interpretation. The interaction of law and

policy in the development of legislation, statutory interpretation and the work of administrative tribunals. The fundamentals of the administrative process: subordinate legislation; administrative institutions, forms of dispute resolution, delegation, discretion, process and judicial review. Substantive law connections are made with other first year courses. The functions of the lawyer within these processes are examined, including issues of professional responsibility. Emphasis is placed on skill development in oral advocacy and drafting both legislation and private law documents.

Law 404 F(3-0)(5 credits)

Property

An examination of the fundamental concepts of property law and the types of property interests recognized by Anglo-Canadian law. The historical evolution of property concepts; the basic concepts of possession, ownership and title; estates and other interests in land such as joint and concurrent ownership, easements, covenants, licences, mortgages, future interests and perpetuities; the landlord and tenant relationship; the land titles system of registration of title to land; the social constraints upon property use and disposition; and property rights of aboriginal peoples.

Law 405 H(3-2T)(3 credits)

Legal Communication and Research

A series of classes, tutorials and exercises designed to introduce students to the basic forms of legal communication and research in Canada. Introduction to and practice with specific forms of legal communication, including the case comment, the memorandum of fact and law, and oral advocacy. Introduction to and practice with legal bibliography and legal research, concentrating on the use of Canadian materials, including computer databases.

Note: This course is graded CR, D, or F.

Law 406 F(3-0)(5 credits)

Torts

An analysis and critique of the law of torts, primarily the law of negligence, with personal injury as the main focus, although other torts will also be introduced. The nature of tort law and its process; an anatomy of the law of negligence - the nature and extent of liability, defences, remedies, and the assessment of damages; intentional torts; economic torts; strict liability; bailment; the impact of private insurance on the tort system; alternative forms of compensation.

Law 410 F(2-0)(4 credits)

Crime: Law and Procedure

An anatomy of criminal conduct and the law's treatment of it utilizing a limited range of criminal offences. The designation of human conduct as criminal and a consideration of the social, cultural and political forces involved; the development of the criminal process in English common law, its translation to Canada and embodiment in the Criminal Code; the substantive elements of a criminal offence including both the physical and mental elements; the common law and code

amount to no more than 32 credits for the year and no less than 29 credits. The total for each session shall not exceed 17 credits, nor be less than 14 credits. In certain circumstances the credit maximums may be exceeded with permission of the Associate Dean. Part-time students in the second year of the LLB program are required to select a pattern of subjects which together with Law 500, Law 501 and Law 503 amount to no more than 32 credits for the second year of the LLB program and no less than 29 credits. The total for part-time students for each session shall not be less than 7 credits.



Full-time students are required to select a pattern of subjects from 500- and 600- level courses which together with Law 607, Law 629 and Law 639 amount to no more than 32 credits for the year and no less than 29 credits. The total for each session shall not exceed 17 credits nor be less than 14 credits. In certain circumstances the credit maximums may be exceeded with the permission of the Associate Dean. Part-time students in the third year of the LLB program are required to select a pattern of subjects which together with Law 607, Law 629 and Law 639 amount to no more than 32 credits for the third year of the LLB program and no less than 29 credits. The total for part-time students for each session shall not be less than 7 credits. Part-time students shall take Law 607, Law 629 and Law 639 in the final year of their part-time legal studies program.

Law 500 **F(3-0)(5 credits)**

Civil Evidence and Procedure

An examination of the process whereby private claims are prepared, brought to court and tried. Consideration is given to the laws, rules and practices according to which a claim is handled from the moment of initial client contact until the conclusion of the trial. The rationale of the adversary trial as an official method of dispute resolution is examined. Finally, a theoretical introduction to the laws of evidence is coupled with an analysis of the major principles of rules of evidence applicable in civil trials. Emphasis is laid on the development of skills in the drafting of pleadings, the negotiation and settlement of claims and the use of the rules of evidence.

Law 501 **H(2-1)(3 credits)**

Interviewing, Negotiation and Counselling

The development of interpersonal skills and sensitivity essential to legal practice in all its forms. Emphasis is laid on skill in interpersonal communication, both verbal and non-verbal; on eliciting and evaluating information from clients; on short-term crisis counselling; on appropriate referral of clients to counselling or community resources for long-term counselling; and on an appreciation of the utility and dynamics of negotiation. The development of skills is tested and evaluated by simulated exercises using a variety of substantive and functional contexts.

Note: This course is graded CR, D or F.

Law 503 **H(3-0)(3 credits)**

The Administrative Process

An examination of the nature and development of the Canadian administrative process, including the making of the rules and regulations; policy directives and other internal government controls; and judicial review of decisions and rules of public authorities including procedural fairness, review of scope and

correctness of decisions, remedies, and implications of the Canadian Charter of Rights and Freedoms.

Law 509 **H(4-0)(4 credits)**

Business Associations

An introduction to the law as it relates to the corporation. The historical development of the corporation as a legal person is examined, including the growth of statute law as a medium for facilitating and regulating the corporate entity. The entire spectrum of the corporation's existence is considered. Amongst the questions which are raised are the nature of the corporation, the extent of its

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Law 535 H(3-0)(3 credits)**Commercial Transactions II: Secured Transactions**

The legal principles and practices connected with the securing of debt through charges on personal property. The Personal Property Security Act is the main focus. Bank Act security is also considered. A transactional basis is used to illustrate the application of the relevant principles and expose the various skills related to secured transactions problems.

Law 537 H(2-0)(2 credits)**Commercial Transactions I: Sale of Goods**

This course examines the doctrine, practice and policy of the domestic trade in goods. It focuses on the allocation of risk regulated by provincial Sale of Goods legislation and a variety of consumer protection legislation. The course also considers the evolving Agreement on Internal Trade, including the economic theory behind eliminating trade barriers within Canada, its effect on the exchange of goods, services and labour and its links to labour mobility and environmental protection issues.

**Law 539 H(2-0)(2 credits)
(formerly Law 649.03)****Immigration and Refugee Law**

The basic principles, policies and procedures that govern the area of immigration and refugee law, including: the history of Canadian immigration and refugee law; the development of the concept and definition of a refugee; the law of refugee status; selection and admission of immigrants, visitors, students; inadmissible and removable classes; exemptions and minister's permits; appeals and judicial review in the federal court, including Charter issues. The roles of lawyers, officials, decision-makers, non-governmental organizations will be explored in classes, placements and observations.

Law 541 H(3-0)(3 credits)**Business Taxation**

The provisions of the Income Tax Act applicable to business organizations. Particular emphasis is given to the taxation of corporations and their shareholders. Topics covered include: the classification of corporations for tax purposes; the taxation of corporate income; the taxation of corporate distributions; the taxation of various types of corporate reorganizations; and the taxation of partnerships.

Prerequisites or Corequisites: Law 509 and 527 or consent of the Faculty.

Law 543 H(2-0)(2 credits)**Intellectual Property**

The main forms of intellectual property including patents, copyright and trademarks. Other topics include trade secrets, confidentiality and licensing agreements.

Law 545 H(3-0)(3 credits)**Debtor/Creditor Relations**

The legal relationship between debtor and creditor including prejudgment creditors remedies, the execution process, receivership, consumer and commercial arrangements and bankruptcy.

Law 547 H(3-0)(3 credits)**Legal Protection of Human Rights**

A survey of national and provincial human rights laws and practice as distinct from the Charter of Rights and Freedoms; and the main international human rights instruments and standards.

Law 549 H(3-0)(3 credits)**International Law**

The elements of public international law including the role of customary law, the law of treaties, recognition enforcement problems and the roles and powers of international organizations. In exploring these areas the focus of resource development, environmental control and arms limitations is utilized.

Law 551 H(3-0)(3 credits)**Restitution and Fiduciary Obligations**

The principles of restitution and fiduciary duty as independent sources of obligation in Canadian Law. Coverage includes restitutionary claims based on mistake, coercion, benefits conferred without request, ineffective transactions and wrongful acts. The nature and origin of the fiduciary relationship; new and traditional categories of fiduciaries; the duties of fiduciaries; equitable and common law remedies and associated limitations problems.

Law 553 H(3-0)(3 credits)**Insurance Law**

The basic principles of law relating to the various types of insurance, e.g. fire, life, sickness and accident, motor vehicle and liability. Topics include the nature and formation of the insurance contract, the role of insurance agents, insurable interest, misrepresentation and non-disclosure, the rights of third parties against the insurer.

Law 555 H(4-0)(4 credits)**University of Oslo Exchange**

A summer exchange program with the University of Oslo, Norway, run in conjunction with the University of North Dakota, Faculty of Law. Credit for the course will be applied in the Fall Session immediately following the exchange.

Prerequisite: Consent of the Faculty.

Law 557 H(2-0)(2 credits)**The Law of Financial Institutions**

Examines the regulation of financial institutions. The primary focus is on banking law and a consideration of the evolving nature of banking (including constitutional matters), the governance and regulation of banks in contrast to "near banks," the bank-customer relationship, the payment system, fiduciary obligations, lending transactions, and derivative products.

Law 601 H(2-0)(2 credits)**Advanced Criminal Law**

In depth examination of selected areas of criminal law with an emphasis on substantive issues. Topics may include: double jeopardy, police entrapment, conspiracy, corporate crime, theft and related offences, impaired driving and breathalyser offences, plea negotiations, ethical aspects of practising criminal law, mistake of law as a defence, juveniles and the criminal process. Reference is made to special evidential and procedural problems associated with the chosen topics.

Prerequisite or Corequisite: Law 511 or consent of the Faculty.

Law 603 H(2-0)(2 credits)**Advanced Labour Law**

Examines the process of resolving disputes arising out of the interpretation and application of collective agreements by way of grievance and arbitration procedures. Topics include pre-arbitration procedures, arbitrability, the arbitration tribunal and hearing, arbitral remedies, and the enforcement and judicial review of arbitration awards. Selected issues in grievance determination will be studied such as discipline, discharge, seniority, promotion, work assignment, contracting out, technology change and management rights.

Prerequisite or Corequisite: Law 517 or consent of the Faculty.

Law 605 H(2-0)(2 credits)**Advanced Oil and Gas Law**

Selected problems in oil and gas law including special industry contractual problems (farm out, joint operating and royalty agreements), and legislative and regulatory issues. In dealing with the latter, emphasis is laid upon the law and practice of the Alberta Department of Energy and Natural Resources, the Federal Department of Energy, Mines and Resources, the E.R.C.B., the Public Utilities Board and the N.E.B.

Prerequisite or Corequisite: Law 523 or consent of the Faculty.

Law 607 Q(1-0)(1 credit)**Advanced Legal Research**

Advanced legal research including recent developments in technological and electronic legal research. The emphasis is on advanced legal research skills required for successful legal practice.

Law 609 H(3-0)(3 credits)**Canadian Legal History**

Selected topics in the history of the development of law and legal institutions in Canada, with particular reference to the Northwest Territories and the early legal history of Alberta. Topics are chosen to reflect the interests of the students, and course work includes research in the original court records.

Law 613 H(3-0)(3 credits)**Conflict of Laws**

An examination of the doctrines and rules governing the disposition of legal disputes which cut across provincial or national boundaries. Topics covered include jurisdiction, distinctions between substantive and procedural rules, the recognition and enforcement of foreign judgments, domicile, proof of foreign law and the choice of law rules relating to areas of private law - torts, contracts, property, succession and family law.

Law 619 H(2-0)(2 credits)**Estate Planning**

The elements of estate planning including: the use of trusts; the transfer of interests in businesses; planning for spouses, farmers, and disabled people. The impact of the Income Tax Act on estate planning will be considered.

Prerequisite or Corequisite: Law 527 or consent of the Faculty.

Law 627 H(2-0)(2 credits)**Land Use Planning**

Provincial and municipal powers and arrangements for regulating land use. Among the topics considered are municipal legislative procedures, general plans, design briefs, development control, zoning and subdivision controls, as well as judicial supervision or review of these regulatory processes.

Law 629 H(2-0)(2 credits)**Trial Evidence and Procedure**

An examination of the particular problems and requirements of litigation with the focus on the trial and criminal law evidence; topics will include relevance; character evidence; self-serving evidence; the trial structure; witnesses and experts; examination-in-chief and cross-examination; documentary evidence; views; verdicts and judgements; costs and appeals.

Law 631 H(3-0)(3 credits)**Commercial Transactions III: Payment Mechanisms**

Examines a variety of methods for paying for goods and services in both the domestic and international sales context, focusing on negotiable instruments (primarily promissory notes), letters of credit, and electronic funds transfers. The course will also include some of the following payment mechanisms: bills of exchange, cheques, credit cards, debit cards, guarantees, performance bonds, and new payment mechanisms as they emerge in the marketplace. In addition to the law regulating each payment mechanism and the place of each in a variety of sales transactions, the course will include a drafting component.

Law 633 H(2-0)(2 credits)**Advanced Contracts and Torts**

An examination of the appropriate province of the law of contract and the law of tort, with special emphasis upon the historical development of contractual and tortious liability; the availability of contractual and tortious claims arising out of pre-contractual negotiations; the possibility of concurrent or alternative liability in contract and tort arising out of the performance of a contract; the advantages or disadvantages, and the effects, of claiming in contract or tort; and the encroachment of tort upon contract's preserve.

Law 635 H(2-0)(2 credits)**Aboriginal Law**

A survey of issues in aboriginal law; topics include: law of aboriginal societies and recognition of aboriginal custom; self-determination and other applicable principles of international law; self-government; common law recognition of aboriginal title; treaties; the fiduciary duty of the Crown; constitutional entrenchment of aboriginal and treaty rights; application of provincial law: Indian Act, land surrenders and exemptions from seizure and taxation; aboriginal justice systems.

Law 637 H(2-0)(2 credits)**Energy Law**

Selected legal issues related to the energy industry, including the stages of research and exploration, development and production, transportation, marketing and consumption. Emphasis is on the relevant fiscal systems and regulatory processes, particularly in the national and international context.

Law 639 H(2-0)(2 credits)**Trial Advocacy**

Simulated trial practice using various substantive law fields; discoveries and pre-trial settlement negotiations; supervised preparation of all trial documentation; filing requirements for trial; concludes with full trial moot.

Note: This course is graded CR, D or F.

Law 641 H(2-0)(2 credits)**Remedies**

The nature and scope of the relief available to a party who has established a substantive right; topics may include statutory remedies; common law remedies in tort and contract including damages and declaratory relief; and the main equitable remedies of injunction and specific performance.

Law 643 H(3-0)(3 credits)**Trusts**

The concept of the trust and its development in Equity; its relationship to other legal concepts; various types of trusts; constituting, administering and terminating the trust; trustee duties and powers; variation of trusts; breach of trust and the doctrine of tracing; with some attention to the modern uses of the trust and its statutory modifications.

Law 649 H(2-0)(2 credits)**Law and Contemporary Problems**

The impact of a variety of contemporary issues upon the law and legal institutions; law reform and the development of new legal structures to accommodate change in society.

MAY BE REPEATED FOR CREDIT**Law 651** H(0-2)(2 credits)**Directed Research I**

A supervised research project involving the in-depth examination of a legal problem or area of concern not normally covered in a substantive or procedural course and which provides the basis for an article, research paper, brief, memorial, draft legislation, etc. Admission to this course depends on the availability of a Faculty member to supervise the particular projects.

Prerequisite: Consent of the Faculty.

MAY BE REPEATED FOR CREDIT**Law 653** H(0-3)(3 credits)**Directed Research II**

A supervised research project involving the in-depth examination of a legal problem or area of concern not normally covered in a substantive or procedural course and which provides the basis for an article, research paper, brief, memorial, draft legislation, etc. Admission to this course depends on the availability of a Faculty member to supervise the particular projects.

Prerequisite: Consent of the Faculty.

MAY BE REPEATED FOR CREDIT**Law 655** H(2-0)(2 credits)**The Legal Profession and Ethics**

The Canadian legal profession from sociological and legal perspectives, focusing on the roles lawyers play in our legal system. Conflicts between and among those roles, and conflicts between "official ethics" and broader ethical values are explored.

Note: Credit for both Law 655 and Sociology 501 (The Legal Profession) will not be allowed.

Law 657 H(2-0)(2 credits)**Law and Medicine**

The focus is on legal aspects of frontier developments in medical practice including professional confidentiality, birth technology, prolongation of life, human experimentation, mental illness, determination of competency and fitness to stand trial, transplantation, genetics, rights of the unborn child and sterilization. The seminar format will involve a number of practitioners from both Law and Medicine.

Law 659 H(3-0)(3 credits)**Corporate Finance and Securities**

The financing of business entities, and their reorganization; particular emphasis on securities regulation.

Prerequisites or Corequisites: Law 509 and Law 535 or consent of the Faculty.

Law 661 H(2-0)(2 credits)**Advanced Business Transactions**

Selected topics in the field of business transactions including: franchising, builders' liens, sale of goods, applied contracts (e.g. contracts in an international setting, commercial leasing, purchase and sale of business), and competition law.

Law 663 H(2-0)(2 credits)**Dispute Resolution**

Various dispute resolution processes and the role of lawyers. The focus is on mediation and arbitration, but hybrid processes (mediation/arbitration and mini-trials both private and judicial), pre-trial conferences, and the design of dispute resolution systems (preventative lawyering) are included. The seminar addresses "how" and also "whatband 380.04 ere 1.13

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Leisure, Tourism and Society 401 H(3-0)**Special Topics in Leisure, Tourism and Society**

See the Master Timetable for current topic(s).

MAY BE REPEATED FOR CREDIT

Leisure, Tourism and Society 501 H(3-0)**Research in Selected Topics**

Supervised individual study of a special topic.

Prerequisites: Consent of the Leisure, Tourism and Society Director and the Associate Dean (Academic).

Note: Students should contact the office of the Associate Dean (Academic) prior to the first day of classes to arrange an independent study course.

MAY BE REPEATED FOR CREDIT

Leisure, Tourism and Society 591 H(3S-0)
(formerly Leisure, Tourism and Society 409)**Senior Seminar in Leisure, Tourism and Society**

Advanced seminar for the interdisciplinary consideration of selected topics in Leisure, Tourism and Society.

Prerequisites: Leisure, Tourism and Society 309 and Geography 327; or consent of the Faculty.

Note: Restricted to students in the Leisure, Tourism and Society Major and Minor programs. Until August 15, preference in enrollment is given to students who have declared a Major in Leisure, Tourism and Society.

Instruction offered by members of the Department of Linguistics in the Faculty of Social Sciences.

Department Head – R.W. Murray

Note: A student may not register in any Linguistics course unless a grade of at least "C-" has been achieved in each prerequisite for that course.

J n C s s**Linguistics 201** H(3-0)**Introduction to Linguistics I**

A survey of basic linguistic concepts, including: universals of language; articulatory phonetics and phonology of English and other languages; words and meaning; linguistic rules and the formation of sentences.

Note: Not open to students with credit in Linguistics 205 or 207.

Linguistics 203 H(3-0)**Introduction to Linguistics II**

Language in historical and social contexts: writing systems; language change; language families and areas; elements of sociolinguistics and psycholinguistics; Canadian bilingualism.

Prerequisite: Linguistics 201.

Note: Not open to students with credit in Linguistics 205 or 207.

Linguistics 209 H(3-0)**Wordcraft**

A general interest course providing an introduction to the study of language. Topics covered may include the history of English, the origins and

structure of English words, language policy, bilingualism, signed languages, language in popular culture as represented in film and literature.

Note: Not open to students with credit in Linguistics 201/203 or 205/207. Does not count towards the Linguistics major.

S n C s s**Linguistics 301** H(3-0)**English Syntax**

Introduction to syntax, using the structure of English as an illustration. Emphasis on tree-drawing and basic argumentation skills. Topics may include: syntactic categories; grammatical, thematic, and structural relations; syntactic movement.

Prerequisite: Linguistics 201 or 205/207.

Linguistics 303 H(3-0)**Phonology I**

Theory and practice of phonological analysis: the classical phoneme; distinctive features and their organization; methods of analysis; underlying and surface representations; rules and derivations.

Prerequisite: Linguistics 201 or 205/207.

Linguistics 309 H(3-0)**Language and Power**

The nature of the linguistic resources used to create, enhance and justify positions of dominance or subordination, or to influence and persuade populations. Examples drawn from the discourse of gender and ethnic relations, government and business.

Linguistics 311 H(3-0)
(formerly Linguistics 411)**Second Language Acquisition**

Linguistic perspectives on second language acquisition and their implications for second language teaching.

Prerequisites: Linguistics 201/203 or 205/207.

Linguistics 313 H(3-0)
(formerly Linguistics 413)**Classroom-Oriented Second Language Research**

Second language acquisition research that focuses on the second language learner in a variety of formal learning environments.

Prerequisites: Linguistics 201/203 or 205/207.

Linguistics 319 H(3-0)
(formerly Linguistics 409)**Introduction to Semantics**

Introduction to the study of meaning in language. What is meaning and how is it expressed linguistically? How does context affect meaning and how do speakers use language to communicate information? Specific topics include: word meaning, concepts, reference, ambiguity, tense and aspect, mood and modality, and pragmatics. Discusses the meaning of logical function words (connectives and quantifiers) by providing a basic introduction to propositional logic and predicate logic.

Prerequisite: Linguistics 201 or 205/207.

Linguistics 321 H(3-0)**Modern English Grammar**

A comprehensive exploration of contemporary English. The course is based on modern linguistic analysis, but also includes traditional grammatical terminology, as well as language change, attitudes to language varieties and problems in usage.

Note: Not open to students with credit in Linguistics 301. Does not count towards the Linguistics major.

Linguistics 323 H(3-0)**Language in Advertising**

An investigation of the nature of commercial messages from the perspective of linguistic theory. Topics may include truth and falsity, implication, ambiguity, and context-dependence.

Linguistics 331 H(3-0)**First Language Acquisition**

An overview of major issues and developmental patterns in child language acquisition.

Prerequisites: Linguistics 201/203 or 205/207 or Psychology 205.

Note: Students without Linguistics 201/203 will have to complete some supplemental reading in phonetics.

Linguistics 339 H(3-0)
(formerly Linguistics 449)**Psycholinguistics**

Cognitive and neuropsychological foundations of language behaviour, with reference to linguistic theory. Topics include language production, comprehension, and acquisition. Survey of major experimental methodologies.

Prerequisite: Linguistics 203.

Linguistics 341 H(3-2)**Phonetics I**

Intensive practice in the perception, production and transcription of speech sounds accompanied by an introduction to the physiology and acoustics of speech.

Prerequisite: Linguistics 201 or 205/207.

Note: Until August 15, preference in enrollment is given to students who have declared a Major in Linguistics. Linguistics 341 should be taken either before or concurrently with Linguistics 303.

Linguistics 349 H(3-0)**Language and Mind**

An overview of central issues in the study of language and its relationship to the human mind. Topics may include the nature/nurture debate, human specialization for language, and theories of mental representation.

Prerequisite: Linguistics 203.

Linguistics 353 H(3-0)**Historical Linguistics**

Central topics in the study of language change including: principles and methods of linguistic reconstruction; universals, typologies, and the explanation of language change; sources of language change with a consideration of acquisitional and sociolinguistic factors.

Prerequisites: Linguistics 201/203 or 205/207.

Linguistics 373 H(3-0)**Introduction to Sociolinguistics**

Social differentiation of language in terms of the gender, socio-economic status and geographical distribution of speakers.

Prerequisites: Linguistics 201/203 or 205/207.

Linguistics 381 H(3-0)
(English 381)**The History of English**

An introduction to important changes and stages in the history of English including its Indo-European and Germanic origins and a consideration of Modern English grammar and orthography from a historical perspective.

Prerequisites: Linguistics 201/203 or 205/207.

Linguistics 401 H(3-0)**Syntactic Analysis I**

A theoretically grounded approach to syntax using data from a variety of languages. Constructing and evaluating syntactic hypotheses. May involve collecting data from a native speaker of a foreign language.

Prerequisite: Linguistics 301.

Linguistics 403 H(3-0)**Phonology II**

Recent issues in phonological theory.

Prerequisite: Linguistics 303.

Linguistics 407 H(3-0)**Morphology**

An introduction to the study of word-structure. Inflectional and derivational morphology; various morphological processes; morphology on the grammatical and phonological levels. Practical problems in word analysis.

Prerequisite: Linguistics 301 or 303.

Linguistics 431 H(3-0)**Child Language: Syntax and Morphology**

Current topics in the fields of syntactic and morphological acquisition.

Prerequisites: Linguistics 203 and 301.

Linguistics 433 H(3-0)**Child Language: Phonology and the Lexicon**

Current topics in the fields of phonological and lexical acquisition.

Prerequisites: Linguistics 203 and 303.

Linguistics 437 H(3-0)**Introduction to Speech-Language Pathology**

A comprehensive overview of the subject including: basic components of speech and language, normal language development, communication disorders, and current professional issues.

Prerequisite: Linguistics 341.

Note: Not open to students with credit in Linguistics 599.15.

Linguistics 441 H(3-2)**Phonetics II**

Recognition and transcription of segmental and suprasegmental phones paralleled by study of human vocal tract anatomy and laboratory work in the acoustic analysis of speech.

Prerequisite: Linguistics 341.

Linguistics 455 H(3-0)
(formerly Linguistics 355)**Typology**

Study of the unity and diversity of the world's languages. How do the grammars of individual languages differ from each other, and in what ways are they all alike? Which characteristics are common across languages, and which are rare? An overview of the methodology and main results of typological research. Students work with data from unfamiliar languages.

Prerequisites: Linguistics 201/203 or 205/207, and Linguistics 301.

Linguistics 477 H(3-0)**Structure and Interpretation of Discourse**

An investigation of the form and interpretation of sentences in discourse. Topics may include anaphora, presupposition, intonation, and coherence.

Prerequisites: Linguistics 301 and 319.

Note: Not open to students with credit in Linguistics 599.14.

Linguistics 505 H(2-2)
(formerly Linguistics 405)**Field Methods**

Principles and techniques of collecting, editing and analysing elicited linguistic data and associated problems. Practical experience with language consultant(s).

Prerequisites: Linguistics 203, 301 and 303.

Linguistics 511 H(3-0)**Syntactic Analysis II**

A survey of current work in syntactic theory.

Prerequisite: Linguistics 401.

Linguistics 519 H(3-0)
(Philosophy 519)**Formal Semantics of Natural Language**

Central issues in the logical semantics of natural language, focusing on topics such as quantification, scope, and the interpretation of pronouns.

Prerequisite: Philosophy 279 or 377; or consent of the Department. Philosophy 307 or 407 or Linguistics 319 recommended.

Note: Not open to students with credit in Linguistics 509.

Linguistics 525 H(3-0)**Topics in Second-Language Acquisition**

Linguistic theory applied to a variety of second-language learning/teaching situations. Theoretical orientation and specific language treated will vary from time to time.

Prerequisite: One of Linguistics 311, 313, 411, 412, or 413; or consent of the Department.

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Linguistics 531 H(3-0)**Survey of Amerindian Languages**

A survey of the indigenous languages of the Americas, including classifications of language families and structural analysis of selected languages.

Prerequisites: Linguistics 203 and either Linguistics 301 or 303.

Linguistics 541 H(3-0)**Indo-European Linguistics**

An introduction to the comparative study of the older stages of the principal Indo-European languages, and the reconstruction of the proto-language.

Prerequisite: Linguistics 353 or consent of the Department.

Linguistics 551 H(3-0)**Linguistic Analysis**

Linguistic analysis of a language or language family.

Prerequisite: Linguistics 301 or 303 or consent of the Department.

Note: Consult Department regarding topics offered in any given year.

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Linguistics 5v-0

631.04. Syntax**631.05. Semantics**

Prerequisite: Consent of the Department.

Note: Consult the Department regarding topics offered in any given year as topics vary. Not offered every year.

Linguistics 633 H(3-0)**Topics in Language Acquisition**

Seminar in language acquisition.

633.01. First Language Acquisition**633.02. Second Language Acquisition**

Prerequisite: Consent of the Department

Note: Consult the Department regarding topics offered in any given year as topics vary. Not offered every year.

Linguistics 635 H(3-0)**Analysis of a Language or Language Family**

Seminar in the analysis of a selected language or language family

Prerequisite: Consent of the Department.

Note: Consult the Department regarding topics offered in any given year as topics vary. Not offered every year.

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Linguistics 651 H(3-0)**Topics in Historical Linguistics**

Seminar in historical linguistics.

Note: Consult the Department regarding topics offered in any given year as topics vary. Not offered every year.

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Linguistics 697 H(3-0)**Thesis Research Development****Linguistics 699 H(3S-0)****Conference and Reading Course**

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Linguistics 711 H(3-0)**Advanced Syntactic Analysis II****Linguistics 713 H(3-0)****Advanced Phonological Analysis II**

Instruction offered by members of the Haskayne School of Business.

Management Information Systems Chairperson – R. Murch

Note: Students have the opportunity to take courses offered by the Haskayne School of Business without the stated prerequisites, with the written permission of the Associate Dean (Undergraduate Programs) as appropriate, upon the recommendation of the instructor of the course. However, should a student fail to achieve satisfactory standing in any course for which the stated prerequisite(s) is (are) lacking, he/she may be required to successfully complete the stated prerequisite(s) prior to being permitted to repeat the course. Students are required to have

consent of the Haskayne School of Business Office before registering in 600-level courses offered by the Haskayne School of Business.

Students pursuing a Management Information Systems concentration are required to complete an approved Computer Science course on programming which teaches a structured programming language (such as Pascal). Please consult the MGIS Chairperson or the Associate Dean (Undergraduate Programs), for the currently approved list of such courses. Students should register for one of these courses as a senior option in the first session of their third year if it has not been taken as an option in Year One or Two. Only students pursuing the Management Information Systems concentration may consider this as a Senior Course.

S n C s s**Management Information Systems 317 H(3-1) (formerly Management Information Systems 323)****Introduction to Management Information Systems**

Computer-based Management Information systems, and how such information systems support decision-making at all levels of management. The development, organization, management control, and evaluation of information systems activities, and the societal implications of the use of the computer in business. Concepts are linked to business applications through case examples and project assignments involving the business community.

Prerequisites: Admission to the Haskayne School of Business, second year standing, Management Studies 291, and Computer Science 203.

Management Information Systems 321 H(3-1)**Information Systems in Business Organizations**

Introduction to information technology (IT) concepts in relation to the business environment. Understanding the components of IT such as hardware, software, communications and systems development.

Prerequisite: Second year standing.

Note: This course is not available for credit towards the Bachelor of Commerce degree. Until August 15, preference in enrollment is given to students who have declared a Management and Society minor.

Management Information Systems 331 H(3-1)**Database Processing Systems**

Database design and development skills built through real-life problems. Conceptual understanding of database design. Practical experience using design tools, such as the entity-relationship technique, and industry-leading database software. Implementing a database with a query language to answer managerial questions.

Prerequisite: Management Information Systems 317.

Management Information Systems 333 H(3-2)**Information Systems Analysis and Design**

Analysis and design steps in information systems development. Analysis and description of information flows in an organization. Systems development methodologies and tools. System selection acquisition, implementation and evaluation.

Prerequisite: Management Information Systems 317.

Management Information Systems 455 H(2-2)**Management Information Systems Field Project**

Structured and supervised experience in assessing the feasibility, developing and/or implementing of business information systems. Student project teams are assigned to field projects in organizations.

Prerequisites: Third year standing, Management Information Systems 317 and one other senior Management Information Systems course.

Management Information Systems 461 H(3-0)**Telecommunications Basics**

Basic telecommunications and data communications concepts relevant to organizations. Fundamentals of analog and digital signalling and transmission. Wide and local area networking. Protocols and standards; telecommunication applications. The role of the Internet in organizations.

Prerequisites: Third year standing and Management Information Systems 317.

Management Information Systems 463 H(3-0)**Management Issues in Information Systems**

Problems of managing the corporate information systems activity. Relationship between the information systems function and the corporation. Strategic role of information systems in achieving the organization goals. Diffusion of innovation. Managing end-user computing. Emerging managerial issues.

Prerequisites: Third year standing and Management Information Systems 317.

Management Information Systems 465 H(3-0)**Enterprise Resource Planning**

Basics of organization wide information systems. Exploration of technology, processes and management principals.

Prerequisites: Third year standing and Management Information Systems 317.

Note: Credit for both Management Information Systems 465 and 557.02 will not be allowed.

Management Information Systems 467 H(3-0)**Electronic Commerce**

Investigation of emerging technologies in electronic communication. Discussion of electronic commerce tools, business principles and systems development.

Prerequisites: Third year standing and Management Information Systems 317.

Note: Credit for both Management Information Systems 467 and 557.01 will not be allowed.

Management Information Systems 557 H(3-0)**Selected Topics in Management Information Systems**

Discussion of current or special interest topics in Management Information Systems from a managerial orientation.

Prerequisites: Third year standing and Management Information Systems 317.

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G a r a C e e**Management Information Systems 601 H(3-1)**
(formerly Management Information Systems 631)**Management Information Systems**

The fundamental role of information systems (IS) and technologies (IT) in leading and managing effective organizations. Strategic, operational and control aspects of IS. Interfaces with decision processes and functional areas of business. Development, organization, management control, evaluation and societal implications of IS activities. Concepts are linked to competence in effective organizational practices through a variety of instructional approaches including case examples, action-learning student projects, laboratory and tutorial exercises.

Management Information Systems 725 H(3-0)**e-Technology**

Investigation of emerging technologies in electronic communication. Discussion of electronic commerce tools, business principles and systems development.

Prerequisite: Management Information Systems 601.

Management Information Systems 735 H(3-0)**Information Systems Analysis and Design**

Instruction, practice, and application of systems analysis and design techniques. Examination of systems development life cycle for managerial control purposes. Development of standards for systems work. Management systems concepts for computer and information system implementation. Behavioural aspects of user/analyst interface.

Prerequisite: Management Information Systems 601 or 631.

Management Information Systems 737 H(3-0)**Data Base Administration**

Examination of the data structures relevant for business information systems and their implementation under Data Base Management System. Consideration of the data base administration function and organizational implications of data base systems are covered.

Prerequisite: Management Information Systems 601 or 631.

Management Information Systems 743 H(3-0)**Telecommunications**

Basic telecommunications and data communications concepts relevant to organizations. Fundamentals of analog and digital signalling and transmission. Wide and local area networking. Protocols and standards; telecommunication applications. The role of the Internet in organizations.

Prerequisite: Management Information Systems 601.

Management Information Systems 797 H(3S-0)**Advanced Seminar in Management Information Systems**

Prerequisite: Consent of the business school.

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P D C e**Management Information Systems 799 H(3S-0)****Doctoral Seminars in Management Information Systems****799.01. PhD Seminar I in Management Information Systems****799.02. PhD Seminar II in Management Information Systems****799.03. PhD Seminar III in Management Information Systems****799.04. PhD Seminar IV in Management Information Systems**

Instruction offered by members of the Haskayne School of Business.

J n C e**Management Studies 291 H(3-3)****Introduction to Business**

Introduces the functional areas of business and the integration of these areas for effective and efficient operation of organizations in a variety of sectors. Emphasizes effective team work skills, research skills, and decision-making skills, using experiential learning modules to study the problems and issues encountered by organizations. Provides foundation for Senior Courses in the Haskayne School of Business.

Note: Not open to students with credit in Policy and Environment 201.

S n C e e**Management Studies 391 H(3-0)****Research and Analysis for Decision Making**

Use of data-driven analysis to guide managerial decision-making. Why, when and how one can obtain and organize data, how to analyze the data to obtain information and use this knowledge to make informed decisions.

Prerequisites: Admission to the Haskayne School of Business, second year standing, Mathematics 249 or 251 or equivalent, Statistics 217, Computer Science 203 and Management Studies 291.

Note: Not open to students with credit in Operations Management 353.

Management Studies 491 H(3-3)**Organizational Change and Innovation**

Identify and evaluate human and financial resource implications of organizational change. Specific emphasis on innovation, information systems and conflict resolution.

Prerequisites: Admission to the Haskayne School of Business, third year standing, Finance 317, Human Resources and Organizational Dynamics 317, Management Information Systems 317, Marketing 317, Operations Management 317.

Management Studies 511 H(3-0)**Leadership Skills; Student Business Start-up**

Provides general management skills through hands-on facilitation of a new business start-up. Teaching business basics to elementary school students and guiding them through the start-up, running and shut-down phases of a fundraising business.

Prerequisites: Admission to the Haskayne School of Business, consent of the business school and fourth year standing.

Note: Not open to students with credit in Management Studies 597.13.

Management Studies 559 H(3-0)**Selected Topics in Management**

Examination of selected topics in management.

Prerequisites: Admission to the Haskayne School of Business and third year standing.

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Prerequisites: Admission to the Haskayne School of Business and third year standing. M

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models are implemented with spreadsheets to develop skills in generating managerial insight from data and in dealing with uncertainty. Topics covered include basic probability and statistics, decision trees, regression analysis, optimization, and simulation.

Management Studies 615 **H(3-0)**

Strategic Business Analysis

Introduction to strategic analysis. Integration of learning from various management disciplines through a "field experience" study of a business firm.

Management Studies 701 **H(3-0)**

Research Methods in Management

Research design and techniques in management that will prepare students to conduct their research projects.

Management Studies 741 **H(3-0)**

Business Process Improvement and Creative Problem Solving

Business process improvement and creative problem solving as critical components of competitiveness. The adjective "business" is used to indicate that the course emphasizes improvements in non-manufacturing processes (of relevance to all organizations) in such areas as development, distribution, financial accounting/planning, order entry, personnel, and purchasing.

Marine Science 507 H(0-6)**Directed Studies**

Directed studies under the supervision of a member of the faculty. Involves a research project approved by the supervisor in the field of interest of the student, and will be designed to take maximum advantage of the laboratory and/or field opportunities offered by the Bamfield Marine Station.

Marine Science 509
(Marine Science 470†)**Directed Research in Aquaculture**

Design and execution of a research project in the field of aquaculture under the supervision of a scientist working in association with the Bamfield Station. A written report is a requirement.

Prerequisite: Marine Science 451.

Marine Science 511 H(3S-0)
(Marine Science 480†)**Papers and Seminar in Marine Science**

The purpose of this course is to provide a forum for students to integrate the knowledge they are obtaining from the other courses in this program. It will be a combination of presentations by resident and visiting researchers followed by discussion, discussion of original papers selected by the instructor(s), and short critiques of original papers by each student.

Prerequisites: Students are expected to have completed 2 years of a Biology program. Others may be admitted by permission of the instructor in consultation with the Bamfield Marine Station.

Marine Science 515 H(3-3)
(Marine Science 415 †)**Structure and Function in Marine Animals**

This course will use marine invertebrates and vertebrates to explore the structural plans of animals in a functional framework. Rather than providing a comprehensive survey of diversity in the animal kingdom, specific taxa will be chosen that exemplify specific systems (e.g., respiratory, skeletal, nervous, etc.). The major taxa will be discussed together with minor groups that have peculiarities that are of general biological importance. This course will combine the disciplines of classification, evolution, morphology, biomechanics, physiology and biochemistry. The emphasis placed on each discipline will depend on the interests of the instructor. Fieldwork will be integrated with the laboratory exercises.

Prerequisites: Students are expected to have completed 2 years in a Biology program and to have successfully completed introductory courses in organismal diversity, physiology, cell biology and/or biochemistry. Others may be admitted by permission of the instructor in consultation with the Bamfield Marine Station.

Marine Science 525 H(3-3)
(Marine Science 425†)**Ecological Adaptations of Seaweeds**

An exploration of morphological, physiological, genetic and reproductive adaptations of seaweeds to their natural and man-altered environments. Daily lectures and laboratory exercises will complement frequent field observations.

Prerequisites: Students are expected to have completed 2 years in a Biology program and to have successfully completed courses in organismal diversity, introductory genetics, cell biology and/or

biochemistry. Statistics is recommended. Others may be admitted by permission of the instructor in consultation with the Bamfield Marine Station.

Marine Science 537 H(3-3)
(Marine Science 437†)**Population and Community Ecology of Marine Organisms**

An introduction to the concepts of marine plant, animal and community ecology. Emphasis will be on organism/physical and chemical environmental interactions, organismal interactions, and concepts of biological diversity. Daily lectures and laboratory exercises will be complemented by frequent field excursions.

Prerequisites: Students are expected to have completed 2 years in a Biology program. Statistics is recommended. Others may be admitted by permission of the instructor in consultation with the Bamfield Marine Station.

Marine Science 540
(Marine Science 440†)**Biology of Marine Birds**

A study of the interrelationship of birds and the marine environment. Lectures will emphasize the systematics and ecological relationships, behaviour, life histories, movements and conservation of marine birds. Census techniques and methods of study of marine birds in the field will be considered. Seabird identification, classification, orphology, plumage and molt will be examined in the laboratory.

Prerequisite: Zoology 377.

Marine Science 544
(Marine Science 445†)**Biology of Marine Mammals**

A survey course covering systematics and distribution of marine mammals, their sensory capabilities and physiology, with special emphasis on the Cetacea. The course will include field work in the vicinity of Barkley Sound and will include an independent field study.

Prerequisite: Zoology 377.

Marine Science 546
(Marine Science 446†)**Comparative Ethology**

A comparative study of marine animals (vertebrate and invertebrate) emphasizing behavioural description, underlying physiological mechanisms, the biological significance of behaviour and behavioral evolution. The course will include independent laboratory and field studies.

Prerequisites: Zoology 375, 377 and Biology 313.
Note: Completion of Zoology 461 and either 463 or 465 prior to this course will be of definite advantage.

Note: Credit for both Zoology 567 and Marine Science 546 will not be allowed.

Marine Science 572
(Marine Science 410†)**Marine Invertebrate Zoology**

A survey of the marine phyla emphasizing natural history, morphology and systematics of the local invertebrate fauna. The course will include lectures, laboratory work, field collection, identification and observation. The study of living specimens is emphasized both in the laboratory and in the field.

Marine Science 574
(Marine Science 412†)**Biology of Fishes**

Classification, physiology, ecology, behaviour and zoogeography of fishes with particular emphasis on those in the marine environment of the British Columbia coast. Involves some field projects.

Marine Science 582
(Marine Science 413†)**Biology of Marine Molluscs**

An advanced course of selected topics emphasizing functional morphology, ecology and evolution. Field trips will be undertaken to survey the representative molluscs of the Bamfield region. Students will be expected to complete an independent field or laboratory study of selected molluscs.

Prerequisite: Marine Science 572 (410) or equivalent.

Graduate Courses

Enrollment in any Graduate Course requires consent of the Department.

600-level courses are available with permission to undergraduate students in the final year of their programs.

Special Graduate Courses: Each year the Western Canadian Universities Marine Biological Society offers short (one-week) intensive courses especially for graduate students interested in Marine Biology. Topics vary from year to year. Details are available from the Department of Biological Sciences.

Marine Science 600
(Marine Science 500†)**Directed Studies**

A course of directed studies under the supervision of a member of faculty, involving a research project approved by the supervisor. Each study will be designed to take maximum advantage of laboratory and/or field opportunities offered by the Bamfield Marine Station.

Marine Science 601
(Marine Science 502†)**Special Topics (3 weeks)**

Courses of a specialized nature offered, as opportunities arise, by distinguished scientists visiting the Bamfield Marine Station.

Marine Science 602
(Marine Science 501†)**Special Topics (6 weeks)**

Courses of a specialized nature offered, as opportunities arise, by distinguished scientists visiting the Bamfield Marine Station.

Instruction offered by members of the Haskayne School of Business.

Marketing Chairperson – J. Agarwal

Note: Students have the opportunity to take courses offered by the Haskayne School of Business without the stated prerequisites, with the written permission of the Associate Dean (Undergraduate Programs), as appropriate, upon the recommendation of the instructor of the course. However, should a student fail to achieve satisfactory standing in any course for which the stated prerequisite(s) is (are) lacking, he/she may be required to successfully complete the



Mathematics 221 H(3-1T-1)***Linear Algebra for Scientists and Engineers***

Systems of equations and matrices, vectors, matrix representations, and determinants. Complex numbers, polar coordinates. Eigenvalues, eigenvectors. Applications in the physical sciences.

Prerequisite: A grade of 70 per cent or higher in Mathematics 30 or Pure Mathematics 30.

Note: Credit for both Mathematics 221 and 211 will not be allowed.

Note: See the paragraph titled Mathematics Diagnostic Test in the Program section of this Calendar.

Mathematics 249 H(4-1T-1)***Introductory Calculus***

Algebraic operations. Functions and graphs. Limits, derivatives, and integrals of exponential, logarithmic and trigonometric functions. Fundamental theorem of calculus. Applications.

Prerequisite: A grade of 70 per cent or higher in Mathematics 30 or Pure Mathematics 30.

Note: Not open to students with 60% or higher in Mathematics 31, except with special departmental permission.

Note: See the paragraph titled Mathematics Diagnostic Test in the Program section of this Calendar.

Mathematics 251 H(3-1T-1)***Calculus I***

Functions and graphs, transcendental functions. Limits, derivatives, and integrals of exponential, logarithmic and trigonometric functions. Fundamental theorem of calculus. Applications.

Prerequisite: A grade of 70 per cent or higher in Mathematics 30 or Pure Mathematics 30 and a grade of 50 per cent or higher in Mathematics 31.

Note: Credit for both Mathematics 251 and either 249 or Applied Mathematics 217 will not be allowed.

Note: This course provides the basic techniques of differential calculus as motivated by various applications. Students performing sufficiently well in a placement test may be advised to transfer directly to Mathematics 253 or 263.

Note: See the paragraph titled Mathematics Diagnostic Test in the Faculty section of this Calendar.

Mathematics 253 H(3-1T-1)***Calculus II***

Inverses of trigonometric functions. Methods of integration, improper integrals. Separable differential equations, first and second order linear differential equations, applications.

Prerequisite: Mathematics 249 or 251 or Applied Mathematics 217.

Note: Credit for both Mathematics 253 and either 263 or Applied Mathematics 219 will not be allowed.

Note: Mathematics 253 or 263 is a prerequisite for many 300-level courses in Pure Mathematics, Applied Mathematics, Statistics and Actuarial Science. Students in programs offered by the Department of Mathematics and Statistics are strongly recommended to take Mathematics 263.

Mathematics 263 H(4-1T-1)***Enriched Calculus II***

Inverses of trigonometric functions. Methods of integration, improper integrals. Separable differential equations, first and second order linear differential

Mechanical Engineering 341 H(3-1.5T-3/2)***Fundamentals of Fluid Mechanics***

Basic principles of mechanics of fluids. Fluid statics: forces on surfaces, buoyancy, stability. The continuity, energy and momentum equations and their application to a variety of problems in mechanical engineering. External flows and flow through pipes, jet propulsion and flow measurement. Dimensional analysis and physical similarity.

Prerequisites: Engineering 201, 349 (or 249) and Applied Mathematics 219.

Mechanical Engineering 421 H(3-3/2)***Materials I***

Fundamentals of materials science with emphasis on the structure of materials and structure/property relationships: atomistic models; equilibrium phase diagrams; kinetics and nonequilibrium transformation diagrams; thermal-mechanical processing; microstructure formation and control; ductility mechanisms; material selection; and an introduction to fracture.

Note: Completion of Physics 269 or 369, Chemistry 209, Engineering 311 and 317 prior to this course will be of definite advantage.

Mechanical Engineering 461 H(3-3/2)***Mechatronics***

An introduction to electromechanical components and systems including: electromagnetic devices; mechanical and fluidic devices; modelling of physical systems; system linearization; introduction to feedback; analogue and digital control, fuzzy logic and expert system control.

Prerequisite: Engineering 325.

Mechanical Engineering 471 H(3-2)
(formerly Mechanical Engineering 581)***Heat Transfer***

Modes of heat transfer; conduction, convection, radiation. Conduction in plane walls and cylinders. Conduction-convection systems, fins. Principles of convection. Empirical and practical relations for forced convection heat transfer. Natural convection. Condensation and boiling heat transfer. Heat exchangers. The log-mean temperature difference method.

Prerequisites: Engineering 311, Mechanical Engineering 341.

Mechanical Engineering 473 H(3-2)***Fundamentals of Kinematics and Dynamics of Machines***

Basic mechanisms and linkages in machinery. Position, velocity, acceleration and dynamic forces in planar mechanisms. Cam design and dynamic analysis. Gears and gear trains. Planetary trains.

Prerequisite: Engineering 264 and 219.

problems including, thick-walled cylinders, stability of columns. Analysis of flat plates. Stress concentrations, fracture, fatigue, and contact stresses.

Prerequisite: Mechanical Engineering 479.

Mechanical Engineering 593 **H(3-2)**

Energy Systems

Energy resources. Energy conservation and management. Thermal power plants, internal and external combustion engines. Introduction to fuel technology and processing. Alternative energy systems: hydroelectric, solar, wind, nuclear, magnetohydrodynamics, thermoelectrics, thermionics, photo-voltaic, fuel cells.

Prerequisites: Mechanical Engineering 471 and 485.

Mechanical Engineering 595 **H(3-3/2)**

Gas Dynamics

Fundamentals of one-dimensional gas dynamics. Isentropic and non-isentropic flows, applications of dynamical similarity to shock waves. Oblique shocks, supersonic nozzles, flows with friction or heat transfer. Introduction to computational fluid dynamics (CFD).

Prerequisite: Mechanical Engineering 495.

Mechanical Engineering 597 **H(3-1T-3/2)**

Turbomachinery

Performance of turbomachines, machine selection, Reynolds number and scale effects. Two dimensional flow in turbomachines, degree of reaction and vector diagrams; flow irreversibilities and loss coefficients; pump, compressor and turbine efficiencies. Design of pumps, fans, centrifugal compressors, axial-flow compressors, and axial-flow turbines. Combination of machines with pipes or ducts.

Prerequisite: Mechanical Engineering 495.

Mechanical Engineering 599 **H(3-2)**

Vibrations and Machine Dynamics

Lagrangian equations: application to mechanical systems. Basic vibration theory: free and forced vibration of single- and multidegree-of-freedom systems; damping in machines; vibration absorbers. Balance of rotating machinery: sources of unbalance, rigid rotors, flexible rotors, critical speeds, balancing principles.

Prerequisite: Mechanical Engineering 473.

Gas Dynamics

Mechanical Engineering 603 **H(3-0)**

Physical Fluid Dynamics

Physical phenomena of incompressible fluid motion for a variety of flows, e.g. pipe and channel flow, flow past a cylinder, and convection in horizontal layers. The derivation of the basic equations of fluid mechanics using Cartesian tensor notation. High and low Reynolds number flows including some solutions of the viscous flow equations, inviscid flow, and elementary boundary layer theory. Thermal free convective flows.

Mechanical Engineering 605 **H(3-0)**

Combustion Processes

Review of thermodynamics and chemical kinetics of combustion. Fluid mechanics, heat and mass transfer in combustion phenomena. Autoignition and source ignition, flames and detonation. Quenching

and explosion hazards, flammability and detonation limits. Heterogeneous combustion, combustion practical systems, combustion as affecting pollution and efficiency, some experimental combustion methods.

Mechanical Engineering 607 **H(3-0)**

Mechanics of Compressible Flow

One-dimensional steady and unsteady motion with application to the analysis of supersonic nozzles, diffusers, flow in conduits with friction, shock tubes. Two-dimensional flow of ideal fluid. Small perturbation theory, method of characteristics with application to design of supersonic nozzles. Waves in two-dimensional flow.

Mechanical Engineering 613 **H(0-3S)**

Research Seminar I

Reports on studies of the literature or of current research. This course is compulsory for all MSc and thesis-route MEng students and must be completed before the thesis defence.

NOT INCLUDED IN GPA

Mechanical Engineering 615 **H(3-0)**

Instrumentation

The main topics covered are commonly used techniques for the measurement of temperature, pressure, velocity, mass-flow, concentration in binary and other mixtures, heat transfer rate and heat flux, calorific value of fuels, viscosity, thermal conductivity and diffusion coefficients. In addition, attention is given to flow visualization techniques and to the recording and handling of experimentally obtained data by various means including automatic recorders, high-speed photography and analog-to-digital data converters.

Mechanical Engineering 619 **H(3-0)**

Special Problems

Designed to provide graduate students, especially at the PhD level, with the opportunity of pursuing advanced studies in particular areas under the direction of a faculty member. Students would be required to consider problems of an advanced nature.

Mechanical Engineering 625 **H(3-0)**

Unsteady Gas Dynamics

Origins of unsteady flow; one-dimensional unsteady flow in pipes and ducts; simplified method of analysis, method of characteristics; boundary conditions for method characteristics analyses; graphical and numerical procedures for solving the characteristics equations; application of solution techniques for practical problems; pressure exchangers and other devices utilizing unsteady flow.

Mechanical Engineering 629 **H(3-0)**

Fuel Science and Technology

Review origins of fuels, reservoir technology and geology. Past, present and future energy supply and demand. Classification of fuels. Physical and chemical properties. Fuel handling and fire hazards. Requirements of conventional and non-conventional power and heating plants. Ecological and efficiency considerations. Some non-conventional fuels.

Mechanical Engineering 631 **H(3-0)**

Numerical Methods for Engineers

Introduction, mathematical modelling, sources of errors in the process of numerical analysis and solution methodology; Elements of numerical Mechanical Engineering 15 6921 H(390)

Mechanical Engineering 643 H(3-0)**Optimal and Adaptive Control**

Discrete time and sampled-data system models and properties; discrete time domain controller design principles; system identification using least-squares analysis; self-tuning control; indirect adaptive control; model reference adaptive control; sliding mode control in continuous and discrete time; optimal design of sliding mode controllers; sensitivity functions and their role in control theoretic performance specification; robust stability and robust performance objectives; Kharitonov stability.

Mechanical Engineering 645 H(3-0)**Robotics and Vision Systems**

An introduction to robotics. Kinematics, statics, dynamics, and control of robot arms. Digital image processing and robot vision. Robot programming and applications. Project: design of mechanisms or software related to these topics.

Mechanical Engineering 647 H(3-0)**Combustion in Gas Turbines**

Basic design features of combustion chambers, their types and requirements for aero and industrial applications; combustion fundamentals relevant to gas turbines; aerodynamics; fuel types and fuel injection systems; ignition, flame stabilization, heat transfer, combustion efficiency and how they affect performance and emissions.

Mechanical Engineering 653 H(3-0)**Continuum Mechanics in Engineering**

Review of generalized tensors in index and dyadic notation; kinematics of nonlinear deformation; deformation and strain tensors and their invariants; equations of motion; various stress and pseudostress tensors; basic laws on continuum mechanics; constitutive theory; application of principles to deal materials, including solids and fluids.

Mechanical Engineering 655 H(3-0)**Analysis of Shells and Plates**

General linear and nonlinear equations of the theories of thin shells. Approximate, membrane, and shallow shell theories. Plates as special cases of the shell. Finite elements for plates and shells. Stability and optimum design of plates and shells. Stress concentrations and local loads. Large deflections and limit loads. Applications to the design of pipelines, large containers, pressure vessels, and other mechanical structures.

Mechanical Engineering 661 H(3-0)**Corrosion Science**

Electrochemical thermodynamics. Kinetics of electrode processes. Experimental polarization curves. Instrumentation and experimental procedures. Passivity, Galvanic, pitting, crevice and intergranular corrosion. Corrosion-deformation interactions. Atmospheric corrosion. Oxidation and high temperature corrosion. Protection techniques. Materials selection and design.

**Mechanical Engineering 663 H(3-0)
(Medical Science 663)(Kinesiology 663)****Advanced Biomechanics**

Theoretical and applied aspects of biomechanics in the acquisition and performance of sport skills.

Prerequisite: Consent of the Faculty.

Mechanical Engineering 665 H(3-0)**Mechanical Behaviour of Materials**

The physical and mechanical metallurgy of material behaviour; failure by yielding; ductile and brittle fracture; fracture mechanics and design; strong solids, strengthening mechanisms, strength-structure relationships; elementary dislocation mechanics; application of theory to fatigue, creep, and their interactions.

Mechanical Engineering 667 H(3-0)**Fracture Mechanics**

Basic fracture theory, failure criteria, overview of fracture mechanics, brittle and ductile failure, crack tip parameters, geometric considerations, methods of analysis, fracture toughness and testing standards. Applications in design, fatigue subcritical crack growth, creep and impact.

Mechanical Engineering 669 H(3-0)**Fatigue of Materials**

History and origin of fatigue. Stress life, strain life and fracture mechanics approaches. Low and high cycle fatigue. Low and high temperature fatigue. Combined stresses, initiation, and propagation of cracks. Environmental and statistical effects. Testing techniques and variables. Design and specific material behaviour. Mechanisms of fatigue.

Mechanical Engineering 681 H(3-0)**Mechanical Engineering Design Methodology**

The analysis of problems in mechanical design, systematic design methodology and associated techniques. Design assurance. Concurrent design with respect to design for manufacture and design for assembly. Parametric design. Knowledge-based design systems.

Mechanical Engineering 682 F(3-0)**Engineering Design Methodology and Pedagogy**

The role of design methodology in the product realization process; the role of design methodology in engineering design training of novice designers; design as programme integration; instructional methods; design education literature; the role of learning styles, teamwork, project-centred learning; managing training methods; tool-based learning.

Mechanical Engineering 683 H(3-0)**Applications of 3D Rigid Body Mechanics in Biomechanics**

Applications of 3D motion analysis and rigid body mechanics to musculoskeletal system locomotion, and movement. Experimental, theoretical and numerical methods for optical motion imaging, 3D analysis of joint kinematics and kinetics, joint angle representations, prediction of joint forces, data analysis and filtering, error propagation, inverse and forward dynamics approaches, and applications to clinical and orthopaedic engineering.

**Mechanical Engineering 685 H(3-0)
(Medical Science 685) (Kinesiology 685)****Biomechanics of Human Movement**

Introduction to the measuring methods (accelerometry, goniometry, film and film analysis, video systems) of biomechanical analysis of human movement (force and force distribution). Description of the mechanical properties of bone, tendon, ligaments, cartilage, muscles and soft tissues. The relation between structure and function of

biomaterials. Introduction to descriptive analysis of human movement.

Prerequisite: Consent of the Faculty.

Mechanical Engineering 698 F(0-4)**Graduate Project**

Individual project in the student's area of specialization under the guidance of the student's supervisor. A written proposal, one or more written progress reports, and a final written report are required. An oral presentation is required upon completion of the course. Open only to students in the MEng (courses only) program.

Mechanical Engineering 701 H(3-0)**Advanced Mechanical Vibrations**

Free and forced vibrations of discrete and continuous linear systems: oscillators, rods, beams, membranes and plates; analytical and numerical methods. Nonlinear vibrations of simple systems: classification and nonlinearities, phase diagrams, methods of analysis. Random vibrations of discrete systems: introduction to random processes, linear and non-linear response to random forces, methods of analysis.

Prerequisite: Mechanical Engineering 601, or equivalent.

Mechanical Engineering 713 H(0-3S)**Research Seminar II**

Reports on studies of the literature or of current research. This course is compulsory for all PhD students and must be completed before the candidacy examination.

NOT INCLUDED IN GPA

Instruction offered by members of the Department of Physics and Astronomy in the Faculty of Science.

Department Head – R.B. Hicks

Note: For listings of related courses, see Applied Physics, Astronomy, Astrophysics, Physics, and Space Physics.

Medical Physics 623 H(3-0)**Radiotherapy Physics I**

Concepts basic to the use of radiation for treatment of cancer patients. Dose quantities, calculation systems, protocols and measurement. Treatment machines. Planning external beam and brachytherapy treatments. Time-dose fractionation relationships. Special techniques and therapies. Exotic particle therapy including protons and neutrons.

Medical Physics 625 H(3-2)**Radiotherapy Physics II**

Clinical application of Radiotherapy Physics I concepts. X-ray CAT imaging, MRI, SPECT and PET in application to radiotherapy. Real-time portal imaging and MLC. HDR and LDR brachytherapy. CT simulation and 3-D treatment planning. Verification systems and quality assurance. A major component of this course consists of clinical laboratory exercises with instrumentation.

Prerequisite: Medical Physics 623.

Instruction offered by members of the Faculty of Medicine.

Students contemplating taking any of these medical science courses are advised to contact the course coordinator(s) through the Bachelor of Health Sciences program office or the office of the Associate Dean Graduate Science Education

Medical Science 001 **E(10 hours)**

Biomedical Methods I: DNA and Protein Analysis

A hands-on introduction to methods used in the analysis of nucleic acids and proteins, including isolation, purification and quantitation, electrophoresis and blotting, polymerase chain reaction and sequencing.

Medical Science 002 **E(10 hours)**

Biomedical Methods II: Cell Culture and Microscopy

A hands-on introduction to the techniques of cell culture and light and fluorescence microscopy.

J n C s s

Medical Science 201 **H (3-1T)**

Human Anatomy and Physiology

Integrated topics on the structure and function of human organ systems with major emphasis on application to nursing and other paramedical disciplines.

Prerequisite: Consent of the Faculty of Medicine.

Medical Science 203 **H(3-0)**

Inquiry I Introduction to Inquiry

An introduction to active learning from the context of health and health research. Provides the exposure to the types of skills needed for all the subsequent inquiry courses.

Prerequisite: Admission to the BHSc Honours program.

NOT INCLUDED IN GPA

Medical Science 205 **H(3-0)**

Inquiry II

An introduction to the social, ethical, and philosophical underpinnings of health and health research.

Prerequisites: Medical Science 203 and admission to the BHSc Honours program.

S n C s s

Medical Science 303 **H(3-0)**

Inquiry III

conducting research. Culminates with a Research Symposium Day during which students present and defend their research before an audience of peers and mentors, share their research with the faculty and staff at large through poster presentations and submit a written research thesis.

Prerequisite: Medical Science 504.

Note: Full course offered in single session only.

Medical Science 507 **H(3-3)**

Special Problems in Medical Science

Lectures, seminars, term papers and training in theoretical and/or laboratory methods. After consultation with a faculty member who will supervise the chosen problem, an approval form obtained from the Graduate Sciences Education Office must be signed by the Associate Dean (Graduate Sciences Education) before a student can register.

Medical Science 508 **F(3-3)**



methods specific to certain health conditions and the preventive strategies available for various health conditions.

647.01. Health Research Methods I: Fundamentals of Epidemiology

647.05. Epidemiology of Cancer

647.07. Hospital Epidemiology

647.08. Psychiatric Epidemiology

Prerequisites: Medical Science 643.01 and/or consent of the Faculty.

Medical Science 649 H(1-3)

Practicum in Community Medicine

Clinical or laboratory-based practicum for students enrolled in certain programs of the Department of Community Health Sciences.

649.01. Practicum in Community Medicine

649.02. Practicum in Hospital Epidemiology

Prerequisite: Consent of the Faculty.

NOT INCLUDED IN GPA

Medical Science 651 H(3-0)

Health Promotions

"Health promotion is the process of enabling people to increase control over and to improve their health." The following courses are intended to assist graduate students in putting this Ottawa Charter definition into practice.

651.01. Planning for Health Promotion

651.02. Health Promotion for Women

Prerequisite: Consent of the Instructor.

Medical Science 657 H(3S-0)

Telehealth and E-health

Explores many aspects of e-health, beginning with an initial focus on telehealth. Reflects a range of practice-based activities and research areas in e-health including business plan development, implementation and evaluation of clinical and learning applications.

657.01. Introduction to Telehealth and Telehealth Research

Prerequisite: Consent of the Faculty.

Medical Science 659 H(3-0)

Methods in Health Research

An introduction to research design, sampling, measurement, data collection and data analysis applied to health research including evaluation research.

659.02. Health Research Methods II

659.03. Health Program Planning and Evaluation

659.04. Introduction to Clinical Trials

659.05. Qualitative Health Research

Prerequisites: Medical Science 643.01 and consent of the Faculty.

Note: Credit for both Medical Science 659.05 and Sociology 713.01 will not be allowed

**Medical Science 663 H(3-0)
(Kinesiology 663) (Mechanical Engineering 663)**

Advanced Biomechanics

Theoretical and applied aspects of biomechanics in the acquisition and performance of sport skills.

Prerequisite: Consent of the Faculty.

Medical Science 670 F(0-6)

Practicum in Biomedical Technology

A laboratory-based full course carried out in an academic or industrial setting for a period of at least ten weeks. Students have an opportunity to apply the principles and methods of investigation learned during the Master of Biomedical Technology program and carry out related research in one of the Faculty of Medicine laboratories or in an industrial setting.

Prerequisite: Consent of the Faculty.

Note: Completion of all other course requirements in Master of Biomedical Technology program is normally required prior to registration for this course.

Medical Science 671 H(0-6)

Techniques in Medical Science

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(689.02) and medical image processing (689.03).

689.01. Medical Imaging Techniques

689.02. Advanced Magnetic Resonance Imaging

689.03. Advanced Medical Image Processing

689.99. Medical Imaging Project

Prerequisite: Consent of the Faculty.

Note: Courses are open to interested graduate students in medicine, engineering, and science and to appropriately prepared undergraduate students enrolled in computer engineering, electrical engineering, and physics.

Medical Science 705 H(3-0)

Advanced Methods in Health Research

Advanced health research designs and measurement techniques.

Prerequisite: Medical Science 659.02.

Medical Science 707 H(2S-12)

Family Therapy Practicum

The development of conceptual and experiential expertise in working therapeutically with families.

707.01. Family Therapy I

707.02. Family Therapy II

Prerequisite: Consent of the Faculty.

NOT INCLUDED IN GPA

Medical Science 709 H(3-2)

Advanced Epidemiology

Topics to include causal inference, epidemiologic measures, induction latent period, internal and external validity, control of confounding variables and interaction between study factors.

Prerequisite: Medical Science 647.01.

Medical Science 717 H(150 hours)

Functional Genomics Technologies

An intensive "hands on" laboratory course supplemented with lectures that provides experience and theory underlying current techniques used in functional genomics research. Methods include DNA microarrays, bioinformatics analysis of DNA and protein sequences, retro-recombinant screening, gene marker and mutation analysis, gene product interactions and yeast two-hybrid screens, site-specific mutagenesis, mammalian expression systems and in situ hybridization. More conventional molecular biology methods involving plasmid preparation, Northern and Southern blotting techniques, PCR technology, restriction digestions, subcloning of DNA fragments, and others are included.

Prerequisites: Registration in the Master of Biomedical Technology program or one of Medical Science 537, 609.01, 609.02, 613.05 or equivalent, and consent of the Faculty.

Prerequisite or Corequisite: Medical Science 537 (Biochemistry 537) or equivalent.

Medical Science 731 H(1S-4)

Medical Education

The design, planning, teaching and evaluation of courses in the health science disciplines. Practical experience in teaching methods and curriculum development. Intended for graduate students, faculty and resident physicians, and approved for study credit by the College of Family Physicians of Canada.

731.01. Teaching Methods in the Medical Sciences

731.02. Curriculum Design and Evaluation in the Medical Sciences

731.03. Medical Educational Measurement

731.04. Adult Learning as Applied to Health Professional Education

Prerequisite: Consent of the Faculty.

NOT INCLUDED IN GPA

Medical Science 743 H(3-2)

Biostatistics III

Advanced methods in research design and data analysis in community health: recent advances in sampling and modelling techniques.

Prerequisites: Medical Science 643.01 and 643.02.

Medical Science 751 H(3-0)

Topics in Medical Science

751.02. Cellular and Molecular Pathogenic Mechanisms of Diabetes

751.03. Biostatistics

751.07. The Physiological Development of the Fetus and Newborn

751.09. Ion Channel Diseases

751.12. Ionic Channels of Excitable Membranes

751.15. Receptors

751.18. Neural Control of Posture and Movement

751.30. Joint Injury and Disease Biological Focus

751.31. Joint Injury and Disease Biomechanical Focus

751.40. Introduction to Model Systems

751.41. Critical Perspectives in Proteomics

Prerequisite: Consent of the Faculty.

Medical Science 755 H(1-6)

Directed Study

Lectures, seminars, term papers or training in theoretical and/or laboratory methods at the advanced level in the medical sciences.

Prerequisite: Consent of faculty member who will supervise the chosen study.

MAY BE REPEATED FOR CREDIT

In addition to the numbered and titled courses shown above, the department may offer advanced level Graduate Courses specifically designed to meet the needs of individuals or small groups of students at the advanced doctoral level. These courses are numbered in the series 800.01 to 899.99. Such offerings are, of course, conditional upon the availability of staff resources.

done in centres other than Calgary. Students are encouraged to consider experiences in third world medicine through the International Electives Program. All experiences must be evaluated by a preceptor.

Medicine 408 F(4-2)

Gastrointestinal System

The gastrointestinal system in health and disease.

Medicine 410 F(4-2)

Neurosciences

Essentials of neurological structure and function.

Medicine 412 F(4-0)

Human Development

The normal development, including behavioural, health problems and care requirements of the infant and child. The response of health care delivery systems to the physical and psychological needs of the family. Physical and psychological aspects of the aging process and the challenge to health care systems posed by health problems of the elderly.

Medicine 413 H(4-0)

Integrative II Course

Integration of basic science and clinical information across organ systems with an emphasis on clinical problem-solving ability through the generation and testing of diagnostic hypotheses.

Medicine 414 F(4-2)

Reproductive System

The reproductive system in health and disease.

Medicine 420 F(0-4)

Medical Skills

The medical skills required by students learning to optimize the physical, mental, emotional, and social well-being of patients (and self). Components include Communication, Physical Examination, Clinical Correlations, Informatics, Ethics, Culture, Health and Wellness, and Well Physician.

Medicine 426 F(4-0)

The Mind

The biopsychosocial approach to mental disorder.

Medicine 440 F(0-4)

Applied Evidence Based Medicine

Applied Evidence Based Medicine provides an opportunity to explore in depth, an area of particular interest to each student. Students under the supervision of a preceptor may complete a research project initiated in Medicine 340. Others may pursue a clinical experience utilizing critical appraisal skills to address questions related to prognosis, investigation and/or treatment. Alternatively, students may pursue supervised electives in such areas as History of Medicine, Pathology, Health Economics, Community Health, Palliative Care, Rehabilitation Medicine, etc.

T Y a C s s

Clinical experience given in hospitals and other health care facilities. This experience will be integrated with teaching programs which will include the application of science to problems of health and disease.

The clinical clerkship must include a twelve-week rotation in Internal Medicine (Medicine 504.01), eight weeks of Surgery (four weeks General Surgery 506.01 plus four weeks from surgical subspecialties 506.02-506.10), six weeks of Paediatrics (General Paediatrics 508.01), six weeks of Psychiatry (General Psychiatry 510.01), six weeks of Obstetrics and Gynaecology (General Obstetrics and Gynaecology 512.01), four weeks of Family Medicine (General Family Medicine 502.01), and two weeks of Anaesthesia (General Anaesthesia 516.01). Students will select additional studies from the courses below so that the total period of studies constitutes fifty-four weeks, including a minimum of forty-six weeks of clinical studies.

Medicine 502

Family Medicine
502.01. General Family Medicine Offered in a four-week block.

Medicine 504

Internal Medicine
504.01. General Medicine
504.02. Cardiology
504.03. Dermatology
504.04. Endocrinology and Metabolism
504.05. Gastroenterology
504.06. Hematology
504.07. Immunology
504.08. Infectious Diseases
504.09. Intensive Care (I.C.U.)
504.11. Nephrology
504.12. Neurology
504.13. Oncology
504.14. Clinical Pharmacology
504.15. Pulmonary Medicine
504.16. Rheumatology
504.18. Physical Medicine and Rehabilitation

These are offered in four-week blocks except 504.01 which is offered in a twelve-week block.

Medicine 506

Surgery
506.01. General Surgery
506.02. Ear, Nose and Throat
506.03. Neurosurgery
506.04. Ophthalmology
506.05. Orthopaedics
506.06. Paediatric Surgery
506.07. Plastic and Reconstructive Surgery
506.08. Sports Medicine
506.09. Thoracic Surgery
506.10. Urology

These are offered in two- to four-week blocks except 506.01 which is offered in a four-week block.

Medicine 508

Paediatrics
508.01. General Paediatrics
508.02. Neonatology
508.03. Paediatric Cardiology
508.04. Paediatric Endocrinology
508.06. Paediatric Neurology
508.08. Paediatric Emergency
508.09. Paediatric Oncology
508.10. Paediatric Infectious Diseases
508.11. Paediatric Intensive Care

These are offered in four-week blocks except 508.01 which is offered in a six-week block.

Medicine 510

Psychiatry
510.01. General Psychiatry

Offered in a six-week block.

Medicine 512

Obstetrics and Gynaecology
512.01. General Obstetrics and Gynaecology
512.02. High Risk Obstetrics
512.04. Gynaecologic Oncology

Medicine 514

Other Clerkship Electives
514.02. Emergency
514.04. Geriatrics
514.05. Genetics
514.06. Pathology
514.07. Community Health
514.08. Radiology
514.12. International Health

Medicine 516

Anaesthesia
516.01 General Anaesthesia Offered in a two-

week block
 Anesthesia 4a5080 -1.(Clin 1, Correlm 540s, 1)6or
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J n C s**Museum and Heritage Studies 201 H(3-0)****Introduction to Museum and Heritage Studies**

Introduces the field of Museum and Heritage Studies by examining heritage sites, museums, art galleries, zoos, natural parks and others. Traditional institutions will be examined along with new forms, including virtual museums.

Note: Students may be required to attend off-campus events outside of class time.

S n C s s**Museum and Heritage Studies 301 H(2-2)****Introduction to Heritage Conservation**

Lectures and hands-on exercises concerning conservation of the natural and built environments, documents and rare books, metal objects and works of art.

Note: Not open to students with credit in General Studies 301.03.

Note: Until August 15 preference in enrollment is given to students enrolled in the Museum and Heritage Studies Minor program.

Note: Students may be required to attend off-campus events outside of class time.

Museum and Heritage Studies 303 H(2-2)**Introduction to Audience Development for Museums**

Students will be introduced to five different areas of Audience Development and how audience development is affected by museum education, museum marketing strategies, evaluation and assessment of audience, the use of technology in museums, as well as how audience is affected by museum and community relationships.

Note: Not open to students with credit in General Studies 301.07.

Note: Until August 15 preference in enrollment is given to students enrolled in the Museum and Heritage Studies Minor program.

Note: Students may be required to attend off-campus events outside of class time.

Museum and Heritage Studies 331 H(2-1)
(formerly Museum and Heritage Studies 431)**Critical Issues in Museum and Heritage Studies**

Critical issues in Museum and Heritage Studies, focussing on the ideological foundations of collecting institutions, including museums and archives, the basis of the built and natural heritage, the existence of collections and the concepts of curatorial authority, collecting, preservation and interpretation.

Prerequisite: Museum and Heritage Studies 201.

Note: Students may be required to attend off-campus events outside of class time.

Museum and Heritage Studies 433 H(0-3S)
(formerly Museum and Heritage Studies 531)**Advanced Seminar in Museum and Heritage Studies**

Course content will range from exhibit development, cultural and aboriginal tourism, to organizational change in heritage institutions, advanced material culture studies, business ideology and the cultural sector, pedagogy and the interpretation process in the museum.

Prerequisite: Museum and Heritage Studies 331 or consent of the Program Director.

Note: Students may be required to attend off-campus events outside of class time.

Museum and Heritage Studies 533 H(0-6)**Practicum**

Work in a local museological or heritage institution under a professional supervisor. Students must contact the Program Co-ordinator at least three weeks prior to the start of term for a placement interview.

Prerequisites or Corequisites: Museum and Heritage Studies 331 and consent of the Program Director.

Note: Students must contact the instructor/practicum co-ordinator at least three weeks prior to the start of classes to arrange for placement at a hosting institution.

G a r a C s s**Museum and Heritage Studies 601 H(3-0)****Foundations of Museum and Heritage Studies**

A foundation course including the presentation and discussion of the theory and practice of museums, the built environment, parks and zoos.

Note: Students may be required to attend Field trips.

Museum and Heritage Studies 603 H(3-0)**Management of Museums and Heritage Institutions**

Examines the concept of mission statement, policy and procedures, governance, staff, physical plant, funding - both government and non-government - and marketing. Lectures and discussions around case studies will be used.

Prerequisite: Museum and Heritage Studies 601 or consent of the Program Director.

Note: Students may be required to attend Field trips.

Museum and Heritage Studies 611 H(3-0)**Collecting in Museums and Heritage Institutions**

An examination of collections management: policy, acquisition, deaccessioning, evaluation, conservation, storage, security, travelling, insurance, copyright and tax law.

Prerequisite: Consent of the Program Director.

Note: Students may be required to attend Field trips.

Museum and Heritage Studies 613 H(3-0)**Exhibiting in Museums and Heritage Institutions**

An exploration of past practices and contemporary approaches to exhibiting providing students with the theoretical and practical tools they need to create exhibitions for today's audiences.

Prerequisite: Consent of the Program Director.

Note: Students may be required to attend Field trips.

Museum and Heritage Studies 615 H(3-0)**Learning in Museums and Heritage Institutions**

An exploration of historical and current theory and practice in the educational functions of museum and heritage institutions.

Prerequisite: Consent of the Program Director.

Note: Students may be required to attend Field trips.

Museum and Heritage Studies 621 H(3-0)**Technology for Museums and Heritage Institutions**

An exploration of traditional technologies used in museum and heritage work and how new digital and electronic media are influencing practice.

Prerequisite: Consent of the Program Director.

Note: Students may be required to attend Field trips.

Museum and Heritage Studies 680 F(0-6)**Practicum**

A 160 hour practicum experience in a museum or heritage institution including a major, experiential project.

Prerequisite: Consent of the Program Director.

Note: Some travel may be necessary to complete the project.

NOT INCLUDED IN GPA

Museum and Heritage Studies 690 F(0-6)**Master's Project**

A research project, required of all Masters Students involving the application of research, concepts and theories to a museum or heritage topic of interest to the student.

Prerequisite: Consent of the Program Director.

Note: Some travel may be necessary.

Instruction offered by members of the Department of Music in the Faculty of Fine Arts.

Department Head – M. Edwards

S n C s s**Music Education 315 H(3-2)****Music Techniques in the Elementary School I**

An introduction to the philosophy and teaching of elementary school music with particular emphasis on the primary grades.

Prerequisite: Music Theory and Composition 203 or consent of the Department.

Music Education 317 H(3-2)**Music Techniques in the Elementary School II**

Continuation of Music Education 315.

Prerequisite: Music Education 315 or consent of the Department.

Music Education 331 H(2-1)**Conducting I**

Basic conducting techniques with the use of the baton; simple and condensed scores for selected choral and instrumental works.

Prerequisites: Music Theory and Composition 203 and 221.

Music Performance 213 H(0-6)**Wind Ensemble I**

Performing experience in the Wind Ensemble.

Note: Open to music majors and minors, open to other students with consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions. Audition required. When students pass the audition successfully, consent of the Department is required prior to registration.

Music Performance 215 H(0-6)**University Orchestra I**

Performing experience in the University Orchestra.

Note: Open to music majors and minors, open to other students with consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions. Audition required. When students pass the audition successfully, consent of the Department is required prior to registration.

Music Performance 221 H(0-6)**Early Music Ensemble I**

Performance of instrumental and vocal music written before 1750.

Note: Open to music majors and minors, open to other students with consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions. Audition required. When students pass the audition successfully, consent of the Department is required prior to registration.

Music Performance 223 H(0-6)**Vocal Jazz Ensemble I**

Performance of popular vocal literature.

Note: Open to music majors and minors, open to other students with consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions. Audition required. When students pass the audition successfully, consent of the Department is required prior to registration.

Music Performance 225 H(0-8)**Instrumental Jazz Ensemble I**

Performance in a jazz combo or band.

Note: Open to music majors and minors, open to other students with consent of the Department.

Note: This course meets for four hours per week during the Fall and Winter Sessions. Audition required. When students pass the audition successfully, consent of the Department is required prior to registration.

Music Performance 227 H(0-6)**New Music Ensemble I**

Performance of chamber music written since 1960.

Note: Open to music majors and minors, open to other students with consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions. Audition required. When students pass the audition successfully, consent of the Department is required prior to registration.

Music Performance 229 H(0-6)**World Music Ensemble I**

Performing experience of various world music traditions.

Note: Open to music majors and minors, open to other students with consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 241 H(0-4)**Chamber Music I**

Performance of music for small ensembles.

Note: Open to music majors and minors, open to other students with consent of the Department.

Note: This course meets for two hours per week during the Fall and Winter Sessions.

Music Performance 251 H(1-4)**Second Instrument Study I**

Applied instruction on second instrument or voice. Students electing to study a second instrument are normally expected to study the same instrument for a minimum of two years.

Prerequisite: Open to music majors with consent of the Department.

Note: This course meets for one-half lecture and two laboratory hours per week during the Fall and Winter Sessions.

Music Performance 271 H(0-5)**Class Piano I**

Functional approach to the piano. Open to music majors and minors only.

Note: Credit for this course not applicable to BMus degree.

Music Performance 273 H(0-5)**Class Piano II**

Continuation of Music Performance 271. Open to music majors and minors only.

Prerequisite: Music Performance 271 or consent of the Department.

Note: Credit for this course not applicable to BMus degree.

Music Performance 291 H(1-3)**Performance Practicum I**

Applied instruction in instrument or voice. Open only to students in the Bmus program and music minors after successful audition.

Music Performance 293 H(1-3)**Performance Practicum II**

Continuation of Music Performance 291. Open to music majors and minors.

Prerequisite: Music Performance 291 or consent of the Department.

S n C s s**Music Performance 301** H(0-6)**Chamber Choir II**

Continuation of Music Performance 201.

Prerequisite: Music Performance 201 or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 303 H(0-6)**Women's Choir II**

Continuation of Music Performance 203.

Prerequisite: Music Performance 203 or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 305 H(0-6)**University Chorus II**

Continuation of Music Performance 205. A brief audition is required.

Prerequisite: Music Performance 205 or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 311 H(0-6)**Symphonic Band II**

Continuation of Music Performance 211.

Prerequisite: Music Performance 211 or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 313 H(0-6)**Wind Ensemble II**

Continuation of Music Performance 213.

Prerequisite: Music Performance 213 or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 315 H(0-6)**University Orchestra II**

Continuation of Music Performance 215.

Prerequisite: Music Performance 215 or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 323 H(0-6)

Music Performance 503 H(0-6)**Women's Choir IV**

Continuation of Music Performance 403.

Prerequisite: Music Performance 403 or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 505 H(0-6)**University Chorus IV**

Continuation of Music Performance 405. A brief audition is required.

Prerequisite: Music Performance 405 or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 511 H(0-6)**Symphonic Band IV**

Continuation of Music Performance 411.

Prerequisite: Music Performance 411 or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 513 H(0-6)**Wind Ensemble IV**

Continuation of Music Performance 413.

Prerequisite: Music Performance 413 or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 515 H(0-6)**University Orchestra IV**

Continuation of Music Performance 415.

Prerequisite: Music Performance 415 or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 517 H(0-4)**Opera Workshop**

Practical experience related to the performance of opera; focusing on operatic styles, music theatre exercises and participation in various stage duties.

Note: Open to music and drama majors, open to other students with consent of the Department.

MAY BE REPEATED FOR CREDIT

Music Performance 523 H(0-6)**Vocal Jazz Ensemble IV**

Continuation of Music Performance 423.

Prerequisite: Music Performance 423 or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 525 H(0-8)**Instrumental Jazz Ensemble IV**

Continuation of Music Performance 425.

Prerequisite: Music Performance 425 or consent of the Department.

Note: This course meets for four hours per week during the Fall and Winter Sessions.

Music Performance 529 H(0-6)**World Music Ensemble IV**

Continuation of Music Performance 429.

Prerequisite: Music Performance 429 or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Performance 541 H(0-4)**Chamber Music IV**

Continuation of Music Performance 441.

Prerequisite: Music Performance 441 or consent of the Department.

Note: This course meets for two hours per week during the Fall and Winter Sessions.

Music Performance 555 H(3-0)**Independent Study**

Individual study in a selected performance area.

Prerequisite: Consent of the Department.

MAY BE REPEATED FOR CREDIT

Music Performance 569 H(4-0)**Professional Seminar in Music Performance II**

Continuation of Music Performance 469.

Prerequisites: Music Performance 469 and admission to the Performance Route.

Note: This course meets for two hours per week during the Fall and Winter Sessions.

Music Performance 571 H(3-0)**Topics in Music Performance**

Various topics such as applied music literature, piano, wind or string pedagogy, or vocal pedagogy, phonetics.

Prerequisite: Consent of the Department.

Note: Open only to BMus and BA (Music) students.

MAY BE REPEATED FOR CREDIT

Music Performance 581 H(2-2)**Jazz Improvisation II**

A continuation of Music Performance 481. Improvisation in the jazz idiom, stressing improvisational tools, melody, rhythm, and ear development for selected progressions. Open only to BMus students.

Prerequisite: Music Performance 481.

MAY BE REPEATED FOR CREDIT

Music Performance 591 H(1-3)**Performance Practicum VII**

Continuation of Music Performance 493. Open to students in the BMus program with consent of the Department.

Prerequisite: Music Performance 493.

Music Performance 593 H(1-3)**Performance Practicum VIII**

Continuation of Music Performance 591. Open to

students in the BMus program with consent of the Department.

Prerequisite: Music Performance 591.

Music Performance 693 H(2-3)**Advanced Performance Practicum II**

Continuation of Music Performance 691.

Prerequisite: Music Performance 691 or consent of the Department.

Instruction offered by members of the Department of Music in the Faculty of Fine Arts.

Department Head – M. Edwards

J n C s s**Music Theory and Composition 201 H(3-0)****Materials of Music I**

Part-writing and analysis of diatonic music.

Note: Open to students accepted as music majors and minors on the basis of the entrance audition and to qualified students from other areas with consent of the Department.

Music Theory and Composition 203 H(3-2)**Materials of Music II**

Part-writing and analysis with an emphasis on diatonic harmony and modulation in the music of the eighteenth century.

Prerequisite: Music Theory and Composition 201 or consent of the Department.

Music Theory and Composition 221 H(0-6)**Musicianship I**

Development of skills in rhythm, intonation and sight-singing. Performance of two-part contrapuntal exercises with diatonic modulation.

Note: Open only to students accepted as music majors and minors on the basis of the entrance audition or consent of the Department.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

S n C s s**Music Theory and Composition 301 H(3-2)****Materials of Music III**

Part-writing and analysis with an emphasis on chromatic harmony and modulation in the music of the nineteenth century.

Prerequisite: Music Theory and Composition 203 or consent of the Department.

Music Theory and Composition 303 H(3-2)**Materials of Music IV**

Part-writing and analysis with an emphasis on the music of the twentieth century.

Prerequisite: Music Theory and Composition 301 or consent of the Department.

Music Theory and Composition 321 H(0-6)**Musicianship II**

Further development of skills in rhythm, intonation and sight-singing. Performance of two-part contrapuntal exercises with chromatic modulation. Introduction to atonal exercises.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Theory and Composition 331 H(2-1T-3)**Computer Applications in Music**

Use of computers in music composition, performance, education and interdisciplinary media.

Prerequisite: Consent of the Department.

Music Theory and Composition 385 H(0-6)**Jazz Musicianship**

Musicianship in the jazz idiom, stressing the aural perception of jazz scales and modes, seventh-chord and harmonic extensions, common jazz progressions and jazz rhythms.

Prerequisite: Music Theory and Composition 221.

Note: This course meets for three hours per week during the Fall and Winter Sessions.

Music Theory and Composition 391 H(3-0)**Composition I**

Basic compositional techniques, and study of selected twentieth century compositions.

Prerequisite: Music Theory and Composition 203 or consent of the Department.

Music Theory and Composition 393 H(3-0)**Composition II**

Continuation of Music Theory and Composition 391.

Prerequisite: Music Theory and Composition 391 or consent of the Department.

Music Theory and Composition 471 H(3-0)**Form and Analysis**

Investigations into hierarchical relations in music. Study of how various levels of musical structure relate in order to form a whole.

Prerequisite: Music Theory and Composition 303.

Music Theory and Composition 473 H(3-0)**Advanced Harmonic Analysis**

Investigation of the expanded harmonic resources and analytical systems used by composers from the late 19th Century to the present.

Prerequisite: Music Theory and Composition 303.

Music Theory and Composition 475 H(3-0)**Counterpoint**

Practical study of contrapuntal technique, including species counterpoint and 18th Century counterpoint.

Prerequisite: Music Theory and Composition 303.

Music Theory and Composition 477 H(3-0)**Orchestration**

Practical study of instrumentation and scoring, including orchestral and wind ensemble textures.

Prerequisite: Music Theory and Composition 303.

Music Theory and Composition 479 H(3-0)**Electroacoustic Music**

Practical study of electroacoustic and computer music with an emphasis on creative work in the medium.

Music Theory and Composition 491 H(3-0)**Composition III**

Continuation of Music Theory and Composition 393.

Prerequisite: Music Theory and Composition 393 or consent of the Department.

Music Theory and Composition 493 H(3-0)**Composition IV**

Continuation of Music Theory and Composition 491.

Prerequisite: Music Theory and Composition 491 or consent of the Department.

Music Theory and Composition 555 H(3-0)**Independent Study**

Individual study in a selected theory or composition area.

Prerequisite: Consent of the Department.

MAY BE REPEATED FOR CREDIT**Music Theory and Composition 575 H(3-0)****Selected Topics in the Materials of Music Composition**

Advanced practical study of compositional techniques selected from such subjects as: electroacoustic music, orchestration, counterpoint, fugue and materials of twentieth century music.

Prerequisites: Music Theory and Composition 303 and consent of the Department.

MAY BE REPEATED FOR CREDIT**Music Theory and Composition 577 H(3-0)****Selected Topics in Music Theory**

Advanced topics in music theory selected from such subjects as: analysis of tonal music, analysis of post-tonal music, rhythmic analysis, acoustics, analysis of selected repertoire and critical approaches to music theory.

Prerequisites: Music Theory and Composition 303 and consent of the Department.

MAY BE REPEATED FOR CREDIT**Music Theory and Composition 581 H(3-1)****Jazz Harmony**

Detailed study of the harmonic materials of jazz.

Prerequisite: Music Theory and Composition 303 or consent of the Department.

Music Theory and Composition 596 F(1-4)**Honours Project**

A major project with an emphasis upon analytic or creative issues.

Prerequisites: Two half courses in Music Theory and Composition at the 400 or 500 level; or Music Theory and Composition 493; or consent of the Department.

Note: Restricted to students in the BA Honours (Music) program.

Music Theory and Composition 598 F(1-4)**Senior Project**

Major project in theory or composition.

Prerequisites: Two half courses in Music Theory and Composition at the 400 or 500 level; or Music

Theory and Composition 493; or consent of the Department.

G a r a C e s

Music Theory and Composition 655 H(3-0)

Independent Study

Individual study in a selected theory or composition area.

Prerequisite: Consent of the Department.

MAY BE REPEATED FOR CREDIT

Music Theory and Composition 671 H(2-2)

Seminar in Music Analysis

Various analytical topics such as set theory and reductive analysis may be offered. Consult the Department for current topic(s).

Prerequisite: Consent of the Department.

MAY BE REPEATED FOR CREDIT

Music Theory and Composition 673 H(3-1)

Selected Topics in Theory and Composition

Various topics such as orchestration, advanced counterpoint, and acoustics may be offered. Consult the Department for current topic(s).

Prerequisite: Consent of the Department.

MAY BE REPEATED FOR CREDIT

Music Theory and Composition 675 H(3-0)

Pedagogy of Music Theory

Refining ideas about music theory and its teaching, while developing and strengthening teaching skills.

Prerequisite: Consent of the Department.

Note: Required course for all PhD (Composition) students.

Music Theory and Composition 691 H(2-2)

Composition Seminar

Prerequisite: Consent of the Department.

Music Theory and Composition 695 H(2-2)

Composition

Prerequisite: Consent of the Department.

MAY BE REPEATED FOR CREDIT

Music Theory and Composition 755 H(3-0)

Independent Study

Individual study in a selected theory or composition area (doctoral level).

Prerequisite: Consent of the Department.

MAY BE REPEATED FOR CREDIT

Music Theory and Composition 775 H(3-0)

Advanced Topics in Theory and Composition

Various topics (doctoral level).

Prerequisite: Consent of the Department.

MAY BE REPEATED FOR CREDIT

Music Theory and Composition 795 H(3-0)

Composition

Individual study in musical composition (doctoral level).

Prerequisite: Consent of the Department.

MAY BE REPEATED FOR CREDIT