

D MUSIC 201 Masterworks of Music

★3 (*fi 6*) (either term, 3-0-0). A study of great works of music, chosen to represent various media and historical styles. Prerequisite: MUSIC 101 or equivalent. Note: Not open to BMus (all routes) students.

MUSIC 207 Instruments for Children

★3 (*fi 6*) (either term, 3-0-0). Laboratory experience with recorder ensemble, small winds, chording and percussion instruments. Prerequisites: MUSIC 151 and 150 or 156.

D MUSIC 209 Woodwind Techniques I

★3 (*fi 6*) (first term, 3-0-0). Practical and theoretical instruction on single-reed instruments. Prerequisites: MUSIC 151 and 150 or 156. Corequisite or prerequisite: MUSIC 121, 124, or equivalent. Restricted to BMus (all routes), BEd Music Major/Minor, and BA Honors Music Major students.

D MUSIC 211 Woodwind Techniques II

★3 (*fi 6*) (second term, 3-0-0). Practical and theoretical instruction on flute, oboe and bassoon. Prerequisite: MUSIC 209. Note: Restricted to BMus (all routes), BEd Music Major/Minor, and BA Honors Music Major students.

MUSIC 213 History of Jazz

★3 (*fi 6*) (either term, 3-0-0). A historical survey of the main evolutionary trends in jazz through analysis of distinctive jazz styles and listening to recorded examples. Prerequisite: MUSIC 100 or satisfactory completion of the Department of Music Theory Placement Examination for other than BMus (all routes) students.

MUSIC 215 Canadian Music

★3 (*fi 6*) (either term, 3-0-0). The history of music in Canada from colonial times to the present. Prerequisite: MUSIC 101 or equivalent.

D MUSIC 216 Brass Techniques I

★3 (*fi 6*) (first term, 3-0-0). Practical and theoretical instruction on trumpet. Prerequisite: MUSIC 151 or 150 or 156. Corequisite or prerequisite: MUSIC 121, 124 or equivalent. Note: Restricted to BMus (all routes), BEd Music Major/ Minor, and BA Honors Music Major students.

D MUSIC 217 Brass Techniques II

★3 (*fi 6*) (second term, 3-0-0). Practical and theoretical instruction on brass instruments. Prerequisite: MUSIC 216 or proficiency examination. Note: Restricted to BMus (all routes), BEd Music Major/Minor, and BA Honors Music Major students.

D MUSIC 220 Percussion Techniques

★3 (*fi 6*) (first term, 3-0-0). Practical and theoretical instruction on percussion instruments. Prerequisites: Music 150 or 156, and 151, or equivalent. Corequisite or prerequisite: MUSIC 121, 124, or equivalent. Restricted to BMus (all routes), BEd Music Major/Minor, and BA Honors Music Major students.

MUSIC 222 Second Practical Subject

★3 (*fi 6*) (full session, 1-0-0). Note: Admission restricted to BMus (all routes) students, and BEd students majoring in secondary music education. Prerequisite: consent of Department.

MUSIC 224 Applied Music

★3 (*fi 6*) (full session, 1-0-0). For non BMus students. Prerequisites: MUSIC 121 or 124 or equivalent and consent of Department.

MUSIC 225 Applied Music

★6 (*fi 12*) (full session, 2-0-0). Restricted to BMus students. Prerequisite: MUSIC 121 or 124 or equivalent.

D MUSIC 230 Choral Techniques and Interpretation I

★3 (*fi 6*) (first term, 3-0-0). Prerequisites: Music 150 or 156, and 151, or their equivalents. Note: Restricted to BMus (all routes), BEd Music Major/ Minor, and BA Honors Music Major students.

S MUSIC 239 Vocal and Instrumental Chamber Ensemble

★3 (*fi 6*) (full session, 0-2L-0). Prerequisite: consent of Department, based upon audition.

S MUSIC 240 Choral Ensemble

★3 (*fi 6*) (full session, 0-4L-0). Concert Choir or Madrigal Singers. Prerequisite: consent of Department, based upon audition.

S MUSIC 241 Instrumental Ensemble

★3 (*fi 6*) (full session, 0-4L-0). Concert Band, Wind Ensemble, Academy Strings, Orchestral Winds, or Jazz Band I or II. Prerequisite: Consent of Department, based upon audition.

D MUSIC 245 Introduction to Music Technologies

★3 (*fi 6*) (either term, 0-3L-0). An introduction to electronic instruments and computers, with a focus on MIDI technology, synthesizers, sequencing, and other music software programs. Prerequisites: MUSIC 151 and 156, or consent of Department.

MUSIC 246 Opera Workshop

★3 (*fi 6*) (full session, 0-4L-0). The coaching and staging of opera literature. Prerequisite: consent of Department, based upon audition.

MUSIC 251 Aural and Keyboard Skills II

★3 (*fi 6*) (full session, 0-3L-0). A continuation of MUSIC 151. Prerequisite: MUSIC 151. Corequisite: MUSIC 255 or 256 or consent of Department.

MUSIC 255 Music Theory III

★3 (*fi 6*) (either term, 3-0-0). A continuation of the study of "common-practice" harmony, including larger forms and writing in a variety of textures. Prerequisites: MUSIC 150 or 155 and 156. Note: Not open to students with credit in MUSIC 250.

MUSIC 256 Music Theory IV

★3 (*fi 6*) (either term, 3-0-0). A continuation of the study of "common-practice" harmony, including larger forms and writing in a variety of textures. Prerequisite: MUSIC 255. Note: Not open to students with credit in MUSIC 250.

MUSIC 259 Introduction to Composition

★3 (*fi 6*) (first term, 3-0-0). Prerequisites: MUSIC 151 and 150 or 156 or equivalent. Registration priority given to BMus, BA (Honors) Music Major, BEd Music Major/Minor, and BA Music Major students.

MUSIC 260 Composition

★3 (*fi 6*) (second term, 3-0-0). Prerequisite: MUSIC 259. Registration priority given to BMus, BA (Honors) Music Major, BEd Music Major/ Minor, and BA Music Major students.

D MUSIC 263 Fundamentals of Orchestration and Arranging

★3 (*fi 6*) (first term, 3-0-0). Prerequisite: MUSIC 150 or 156 or equivalent. Formerly MUSIC 462.

S MUSIC 265 Musical Cultures of the World

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: Music 101 or 165 or consent of Department for students not in the BMus program.

MUSIC 271 Western Music History I

★3 (*fi 6*) (second term, 3-0-0). Middle Ages to 1700. Prerequisite: MUSIC 170.

MUSIC 272 Western Music History II

★3 (*fi 6*) (first term, 3-0-0). 1700-1870. Prerequisite: MUSIC 170.

MUSIC 273 Western Music History III

★3 (*fi 6*) (second term, 3-0-0). 1870 to the present. Prerequisite: MUSIC 170.

MUSIC 279 Women and Music

★3 (*fi 6*) (either term, 3-0-0). A study of music created by women and the social, cultural, and musical phenomena that have shaped women's relationships to music throughout history and across different cultures. Prerequisite: MUSIC 101 or equivalent.

MUSIC 303 Piano Pedagogy I

★3 (*fi 6*) (first term, 3-0-0). Prerequisites: MUSIC 221, 224, 225, or equivalent.

MUSIC 304 Piano Pedagogy II

★3 (*fi 6*) (second term, 3-0-0). Prerequisite: MUSIC 303.

MUSIC 315 Introduction to Conducting

★3 (*fi 6*) (either term, 3-0-0). Prerequisites: MUSIC 151 and 150 or 156 or equivalent.

MUSIC 320 Diction for Singers

★3 (*fi 6*) (full session, 0-2L-0). Prerequisite: MUSIC 125 (Voice), or equivalent.

MUSIC 326 Master Class in Applied Music

★3 (*fi 6*) (Intersession, 3-0-0). Prerequisites: MUSIC 125 or equivalent, and consent of Department.

MUSIC 328 Piano Accompaniment

★3 (*fi 6*) (full session, 0-2L-0). Prerequisites: MUSIC 125 or equivalent, and consent of Department.

MUSIC 342 Specialized Ensemble I

★3 (*fi 6*) (full session, 0-4L-0). Prerequisite: consent of Department, based upon audition.

MUSIC 400 Studies in the History of Opera

★3 (*fi 6*) (either term, 3-0-0). Prerequisites: MUSIC 271, 272, and 273.

MUSIC 401 Studies in the History of the Symphony

★3 (*fi 6*) (either term, 3-0-0). Prerequisites: MUSIC 272 and 273.

MUSIC 403 Piano Literature I

★3 (*fi 6*) (first term, 3-0-0). Prerequisite: consent of Department.

MUSIC 404 Piano Literature II

★3 (*fi 6*) (second term, 3-0-0). Prerequisite: consent of Department.

MUSIC 406 Creative Service Playing for Organists

★3 (*fi 6*) (either term, 0-3L-0). Prerequisites: MUSIC 225 or 224 and consent of Department.

MUSIC 407 Studies in the History of the Concerto

★3 (*fi 6*) (either term, 3-0-0). Prerequisites: MUSIC 271, 272, and 273.

MUSIC 410 Studies in Musical Style I

★3 (*fi 6*) (either term, 3-0-0). Forms, techniques, and styles studied through representative composers and genres of selected style periods. Prerequisite: consent of Department.

MUSIC 411 Studies in Musical Style II

★3 (*fi 6*) (either term, 3-0-0). Forms, techniques, and styles studied through representative composers and genres of selected style periods. Prerequisite: consent of Department.

MUSIC 413 Studies in the History of Jazz

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: MUSIC 213.

D MUSIC 416 Instrumental Conducting

★3 (*fi 6*) (second term, 3-0-0). Prerequisite: MUSIC 315.

D MUSIC 417 Choral Conducting

★3 (*fi 6*) (second term, 3-0-0). Prerequisite: MUSIC 315.

MUSIC 422 Second Practical Subject

★3 (*fi 6*) (full session, 1-0-0). Admission restricted to BMus (all routes) students and BEd students majoring in secondary music education. Prerequisite: consent of Department.

MUSIC 424 Applied Music

★3 (*fi 6*) (full session, 1-0-0). For non-BMus students. Prerequisites: MUSIC 224 or equivalent and consent of Department.

MUSIC 425 Applied Music

★6 (*fi 12*) (full session, 2-0-0). Restricted to BMus students. Note: Students intending to enrol in MUSIC 526 are required to have successfully presented a public recital while enrolled in MUSIC 425.

D MUSIC 431 Band Techniques

★3 (*fi 6*) (either term, 0-3L-0). Musical and practical aspects of band conducting. Prerequisite: A conducting course or substantial conducting experience.

MUSIC 433 The Organ and Its Literature I

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: consent of Department.

MUSIC 434 The Organ and Its Literature II

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: consent of Department.

MUSIC 435 Vocal Pedagogy

★3 (*fi 6*) (either term, 3-0-0). Prerequisites: MUSIC 221, 224, 225, or equivalent.

MUSIC 436 Tonal Counterpoint

★3 (*fi 6*) (either term, 3-0-0). Elementary tonal counterpoint in two and three parts. Prerequisite: MUSIC 256.

MUSIC 439 Vocal and Instrumental Chamber Ensemble

★3 (*fi 6*) (full session, 0-2L-0). Prerequisite: consent of Department, based upon audition.

S MUSIC 440 Choral Ensemble

★3 (*fi 6*) (full session, 0-4L-0). Concert Choir or Madrigal Singers. Prerequisite: consent of Department, based upon audition.

S MUSIC 441 Instrumental Ensemble

★3 (*fi 6*) (full session, 0-4L-0). Concert Band, Wind Ensemble, Academy Strings, Orchestral Winds, or Jazz Band I or II. Prerequisite: consent of Department, based upon audition.

S MUSIC 442 Specialized Ensemble II

★3 (*fi 6*) (full session, 0-4L-0). Prerequisite: consent of Department based upon audition.

D MUSIC 445 Electroacoustic Music

★3 (*fi 6*) (second term, 0-3L-0). Prerequisites: MUSIC 245 or equivalent and consent of Department.

MUSIC 446 Opera Workshop

★3 (*fi 6*) (full session, 0-4L-0). The coaching and staging of opera literature. Prerequisite: consent of Department, based upon audition.

MUSIC 451 Aural and Keyboard Skills III

★3 (*fi 6*) (full session, 0-3L-0). The development of advanced musicianship skills. Prerequisites: MUSIC 251 and 250 or 256.

MUSIC 455 Music Theory V

★3 (*fi 6*) (first term, 3-0-0). Theories of 20th-century music. Prerequisite: MUSIC 256. Note: Not open to students with credit in MUSIC 450.

MUSIC 456 Music Theory VI

★3 (*fi 6*) (second term, 3-0-0). Analysis of pieces from tonal and atonal repertoires. Prerequisite: MUSIC 256. Note: Not open to students with credit in MUSIC 450.

MUSIC 460 Composition

★6 (*fi 12*) (full session, 3-0-0). A sequent course to Music 259 and 260 with emphasis on the study of, and writing in, larger forms. Note: Public performance of works completed in the course will be expected. Registration priority given to BMus, BA (Honors) Music Major, BEd Music Major/Minor, and BA Music Major students.

MUSIC 463 Orchestration

★3 (*fi 6*) (second term, 3-0-0). Prerequisite: MUSIC 263.

MUSIC 471 The Music of Bach

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: MUSIC 201 or equivalent.

MUSIC 473 The Music of Mozart

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: MUSIC 201 or equivalent.

MUSIC 475 The Music of Beethoven

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: MUSIC 201 or equivalent.

MUSIC 501 Music History Seminar I

★3 (*fi 6*) (either term, 0-3s-0). Prerequisite: consent of Department.

MUSIC 502 Music History Seminar II

★3 (*fi 6*) (either term, 0-3s-0). Prerequisite: consent of Department.

MUSIC 504 Honors Essay

★3 (*fi 6*) (either term, 3-0-0). Restricted to BA Honors Music major students.

MUSIC 505 Bibliography and Methods of Research

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: MUSIC 273.

MUSIC 506 Tutorial Study

★3 (*fi 6*) (either term, 3-0-0). Independent research in a specific area of the student's interest. Prerequisite: MUSIC 273.

MUSIC 507 Writing about Music

★3 (*fi 6*) (either term, 3-0-0). Through lectures, assigned readings, and short written assignments, students will investigate technical aspects relevant to writing about music. Uses of grammar, rhetoric, and the graphic design of musical illustrations will be addressed in order to develop facility, as well as a clear and personal style of paper writing. The course will be team taught to cover conventional modes of written expression in music history, theory, and ethnomusicology. Prerequisite: MUSIC 505.

MUSIC 508 Seminar in Canadian Music

★3 (*fi 6*) (either term, 0-3s-0). Prerequisite: MUSIC 273.

MUSIC 522 Second Practical Subject

★3 (*fi 6*) (full session, 1-0-0). Admission restricted to BMus (all routes) students and BEd students majoring in secondary music education. Prerequisite: consent of Department.

MUSIC 524 Applied Music

★3 (*fi 6*) (full session, 1-0-0). For non-BMus students. Prerequisites: MUSIC 424 or equivalent, and consent of Department.

MUSIC 525 Applied Music

★6 (*fi 12*) (full session, 2-0-0). Restricted to BMus students.

MUSIC 526 Senior Recital

★3 (*fi 6*) (full session) Corequisite: MUSIC 525. A formal recital prepared under the guidance of the applied music instructor. Required of students in the BMus (Honors) Performance program and BMus (Performance) program and also available to BMus students with consent of Department.

MUSIC 539 Vocal and Instrumental Chamber Ensemble

★3 (*fi 6*) (full session, 0-2L-0). Prerequisite: consent of Department, based upon audition.

S MUSIC 540 Choral Ensemble

★3 (*fi 6*) (full session, 0-4L-0). Concert Choir or Madrigal Singers. Prerequisite: consent of Department, based upon audition.

S MUSIC 541 Instrumental Ensemble

★3 (*fi 6*) (full session, 0-4L-0). Concert Band Wind Ensemble, Academy Strings, Orchestral Winds, or Jazz Band I or II. Prerequisite: consent of Department, based upon audition.

S MUSIC 542 Specialized Ensemble III

★3 (*fi 6*) (full session, 0-4L-0). Prerequisite: consent of Department based upon audition.

MUSIC 546 Opera Workshop

★3 (*fi 6*) (full session, 0-4L-0). The coaching and staging of opera literature. Prerequisite: consent of Department, based upon audition.

MUSIC 555 Issues in Theory and Analysis

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: MUSIC 456.

MUSIC 556 Seminar in Music Theory

★3 (*fi 6*) (either term, 0-3s-0). Prerequisites: MUSIC 256 and consent of Department.

MUSIC 560 Composition

★6 (*fi 12*) (full session, 3-0-0). A sequent course to MUSIC 460 with emphasis on the study of, and writing for, larger groups of voices and instruments. Note: Public performance of works completed in the course will be expected. Registration priority given to BMus, BA (Honors) Music Major, BEd Music Major/Minor, and BA Music Major students.

MUSIC 565 Area Studies in Ethnomusicology

★3 (*fi 6*) (either term, 3-0-0). Undergraduate students require MUSIC 265 as a prerequisite.

MUSIC 566 Topics in Ethnomusicology

★3 (*fi 6*) (either term, 3-0-0). Undergraduate students require MUSIC 265 as a prerequisite.

MUSIC 581 Trends in Avant Garde Music

★3 (*fi 6*) (either term, 3-0-0). Includes studies in electronic music. Prerequisite or corequisite: MUSIC 450 or 456.

211.163.2 Graduate Courses

Note: The following undergraduate courses may be taken for credit by graduate students: MUSIC 320, 400, 401, 406, 407, 410, 411, 413, 427, 436, 438, 445, 501, 502, 505, 507, 508, 525, 555, 556, 560, 561, 565, 566, 581.

MUSIC 601 Tutorial Study

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: consent of Department.

MUSIC 608 Seminar in 20th-Century Music

★3 (*fi 6*) (either term, 0-3s-0).

MUSIC 610 Current Topics in Music Research I

★3 (*fi 6*) (first term, 0-3s-0). A study of current research in musicology, music theory, ethnomusicology, and the interdisciplinary studies of music, focusing on methodological issues. Prerequisite: consent of Department.

MUSIC 611 Current Topics in Music Research II

★3 (*fi 6*) (second term, 0-3s-0). Continuation in the study of theory, ethnomusicology, and the interdisciplinary studies of music, focusing on methodological issues. Prerequisite: consent of Department.

MUSIC 613 Seminar in Romantic Music

★3 (*fi 6*) (either term, 0-3s-0).

MUSIC 615 Seminar in Musicology I

★3 (*fi 6*) (either term, 0-3s-0).

MUSIC 616 Seminar in Musicology II

★3 (*fi 6*) (either term, 0-3s-0).

MUSIC 621 Applied Music

★6 (*fi 12*) (full session, 2-0-0).

MUSIC 623 Supplementary Applied Music


★3 (*fi 6*) (full session, 1-0-0). Prerequisite: consent of Department.

MUSIC 630 Choral Conducting

★6 (*fi 12*) (full session, 3-0-0).

MUSIC 639 Vocal and Instrumental Chamber Ensemble

★3 (*fi 6*) (full session, 0-2L-0). Prerequisite: consent of Department, based upon audition.

 MUSIC 640 Choral Ensemble

★3 (*fi 6*) (full session, 0-4L-0). Concert Choir or Madrigal Singers. Prerequisite: consent of Department, based upon audition.

 MUSIC 641 Instrumental Ensemble

★3 (*fi 6*) (full session, 0-4L-0). Concert Band Wind-Ensemble, Academy Strings, Orchestral Winds, or Jazz Band I or II. Prerequisite: consent of Department, based upon audition.

MUSIC 646 Opera Workshop

★3 (*fi 6*) (full session, 0-4L-0). The coaching and staging of opera literature. Prerequisite: consent of Department, based on audition.

MUSIC 651 Seminar in Tonal Analysis

★3 (*fi 6*) (either term, 0-3s-0).

MUSIC 652 Seminar in Post-Tonal Analysis

★3 (*fi 6*) (either term, 0-3s-0).

MUSIC 654 Seminar in the Theory of Music

★3 (*fi 6*) (either term, 0-3s-0).

MUSIC 660 Composition

★6 (*fi 12*) (full session, 3-0-0).

MUSIC 665 Issues in Ethnomusicology

★3 (*fi 6*) (either term, 0-3s-0).

MUSIC 666 Field Methods in Ethnomusicology

★3 (*fi 6*) (either term, 0-3s-0)

MUSIC 683 Seminar in Keyboard Literature I

★3 (*fi 6*) (first term, 0-3s-0).

MUSIC 721 Special Projects in Keyboard Music

★6 (*fi 12*) (full session, 2-0-0).

MUSIC 739 Special Projects in Chamber Music

★3 (*fi 6*) (full session, 0-2L-0). Restricted to Doctor of Music students.

211.164 **Musique**

Faculté Saint-Jean

MUSIQ 100 Les rudiments de la musique

★3 (*fi 6*) (premier semestre, 3-0-0). L'étude de la notation musicale et des rudiments de la musique. Introduction à la lecture élémentaire. Note: Les étudiants en BMus ne peuvent pas prendre ce cours. Anciennement MUSIQ 200.

MUSIQ 101 Introduction à la musique

★3 (*fi 6*) (l'un ou l'autre semestre, 3-0-0). Une étude de la littérature musicale en insistant sur l'audition et les moyens analytiques. Un bref survol historique de la musique occidentale. Anciennement MUSIQ 206.

MUSIQ 103 Fondements de la musique

★3 (*fi 6*) (l'un ou l'autre semestre, 0-3L-0). L'acquisition et le développement de connaissances et d'habiletés musicales fondamentales nécessaires à l'enseignement élémentaire. Prérequis: MUSIQ 100 ou l'équivalent mesurable par un test sur les rudiments de la musique. Note: ce cours est réservé aux étudiants du BEd. Anciennement MUSIQ 203.

MUSIQ 140 Ensemble choral

★3 (*fi 6*) (sur les deux semestres, 0-4L-0). Cours de chant choral. Prérequis: accord du professeur après audition.

MUSIQ 151 Culture de l'oreille et facilité au clavier I

★3 (*fi 6*) (sur les deux semestres, 0-3L-0). Perception auditive des matières couvertes en MUSIQ 155 et 156, par la mise en pratique de la lecture à vue, de la dictée et de l'harmonie au clavier. Prérequis: MUSIQ 100 ou l'équivalent mesurable par un test de placement en théorie musicale de la Faculté et un examen sur les habiletés auditives sauf pour les étudiants du BMus. Corequis: MUSIQ 155 et 156. Note: Un demi-cours qui s'étale sur les deux semestres. Anciennement MUSIQ 251.

MUSIQ 155 Théorie musicale I

★3 (*fi 6*) (premier semestre, 3-0-0). Une étude de l'harmonie "classique" (c.-à-d. des XVIIe et XVIIIe siècles) qui inclut l'analyse élémentaire et une discussion préliminaire des éléments relatifs à l'écriture du contrepoint et à la texture chorale. Prérequis: MUSIQ 100 ou l'équivalent mesurable par un test de placement en théorie musicale de la Faculté. Note: ce cours n'est pas accessible aux étudiants ayant des crédits pour MUSIQ 150.

MUSIQ 156 Théorie musicale II

★3 (*fi 6*) (deuxième semestre, 3-0-0). La continuation de l'étude de l'harmonie "classique" et de l'analyse formelle élémentaire. Prérequis: MUSIQ 155.

MUSIQ 201 Les chefs-d'oeuvre de la musique

★3 (*fi 6*) (l'un ou l'autre semestre, 3-0-0). Une étude des plus grands chefs-d'oeuvre musicaux choisis pour représenter divers moyens d'expression et divers styles historiques. Prérequis: MUSIQ 101 ou l'équivalent. Anciennement MUSIQ 306.

MUSIQ 240 Ensemble choral

★3 (*fi 6*) (sur les deux semestres, 0-4L-0). Cours de chant choral. Prérequis: accord du professeur après audition.

211.165 **Native Studies**

School of Native Studies

NS 100 Introduction to Native Studies

★3 (*fi 6*) (either term, 3-0-0). This course will introduce the discipline and expectations of Native Studies to the student by emphasizing research and writing skills necessary in an academic environment. The subject matter for the course will come from such areas as the cultural histories and an analysis of contemporary conditions of Native societies in Canada.

NS 105 Cree Language Challenge

★3 (*fi 6*) (either term). This is an exam only course open to fluent speakers of the Cree language. Credit: Pass/Fail.

NS 152 Introductory Cree

★6 (*fi 12*) (full session, 4-0-1). A general introduction to Plains Cree (Y dialect) grammar and vocabulary, with practice in speaking and work in the language laboratory. No prior knowledge of Cree is assumed. Not open to students with matriculation standing in Cree. Note: Students cannot receive credit for NS 152 and NS 153.

NS 153 Introduction to the Structure of the Cree Language for Cree Speakers

★3 (*fi 6*) (second term, 4-0-0). A course designed specifically for fluent speakers of Cree who require an introduction to the Pentland orthography writing system and formal training and practise with Cree grammatical structure. The focus is on literacy in the Plains Cree dialect. Note: Students cannot receive credit for NS 152 and NS 153. Prerequisite: NS 105.

NS 210 Native Issues and Insights I

★3 (*fi 6*) (either term, 3-0-0). An overview of various background issues

in Native Studies that continue to have a definite impact on the contemporary Canadian aboriginal situation. The focus of the course will be from a Native Studies perspective and deal with issues such as aboriginal rights, conditions regarding land claims, and colonialism.

NS 211 Native Issues and Insights II

★3 (*fi 6*) (either term, 3-0-0). An overview of various major issues facing Canadian aboriginal peoples and governments today, including a comparison with issues for indigenous peoples elsewhere. The focus of the course will be from a Native Studies perspective and deal with issues such as land, self-government, economic development, education, and health.

NS 252 Intermediate Cree

★6 (*fi 12*) (full session, 3-0-1). Introduction to more complex grammatical structures; translation to and from Cree; reading of selected texts; oral practice, including conversation and work on individual projects. Prerequisite: NS 152 or 153.

NS 320 Aboriginal Governments and Politics

★3 (*fi 6*) (either term, 3-0-0). The description, analysis, and principles of various aboriginal governments will be examined. The relative merits of constitutional, legislative, and administrative options for realizing aboriginal self-government will be compared. A study of the international and Canadian examples of local and regional aboriginal governments in practice will be an important focus of this course. Prerequisites: NS 210 and 211 or consent of the School.

NS 330 Native Economic Development

★3 (*fi 6*) (either term, 3-0-0). This course will review underlying factors which affect the economies of Native communities and examine different approaches to Native Economic development, including community, corporate and entrepreneurial business approaches. The Native perspective to Native Economic Development will be a principal theme. The objective of the course will be to assess approaches to the identification, planning, and implementation of economic development strategies for Native communities. Prerequisites: NS 210 and 211 or consent of the School.

NS 340 Aboriginal Legal Issues

★3 (*fi 6*) (either term, 3-0-0). A general and critical overview of the legal issues affecting Native people, with particular reference to Alberta and the NWT. Special attention will be given to the Constitutional Act of Canada, selected federal and provincial legislation, Treaties, and major court cases to introduce current application of native law. Prerequisites: NS 210 and 211 or consent of the School.

NS 345 Management Issues in Native Communities

★3 (*fi 6*) (either term, 3-0-0). The course introduces the major management issues commonly faced by contemporary Native community, public administration, and business organizations as a result of their unique cultural, social, economic, demographic, and political environment. Students will acquire an orientation to the management process and to modern management theory and practices. In addition, opportunities will be made to develop and practice the managerial skills involved in diagnosis, analysis and resolution of management issues frequently encountered in Native organizations. Prerequisites: NS 210 and 211 or consent of the School.

NS 352 Advanced Cree

★6 (*fi 12*) (full session, 3-0-1). An intensive course designed to enable students to acquire considerable facility both in oral communication and in writing, employing both Roman and syllabic orthography. Prerequisite: NS 252.

NS 355 Native Oral Traditions and Indigenous Knowledge

★3 (*fi 6*) (either term, 3-0-0). This course considers oral traditions as aspects of broader, culturally-defined systems of knowledge, in which stories are vehicles for encoding and transmitting knowledge about the people, their culture, and their history. It focuses on new academic and community-based approaches, as well as the complementarity of oral traditions/indigenous knowledge and Western science. Students will explore the evolving roles of oral traditions for contemporary Native peoples. Prerequisites: NS 210 and 211 or consent of the School.

NS 360 Contemporary Native Art

★3 (*fi 6*) (either term, 3-0-0). A study of contemporary North American Native artists with emphasis on the philosophical and cultural statements made through their artistic expression. Special attention will be placed on living mainstream Canadian Native artists, as well as on Canadian native artists that are part of the Northwest Coast, Plains, Woodland, Algonquin, and Pan-Indian schools of art. Prerequisites: NS 210 and 211 or consent of the School.

NS 370 The Metis: The Emergence of a People

★3 (*fi 6*) (either term, 3-0-0). An examination of the factors responsible for the emergence of Metis communities in different areas at different times, with the emphasis on Canada. The development of Metis people together with lifestyles that serve to distinguish them from others will receive much attention. Where applicable, comparisons with similar

experiences elsewhere in the world will be made. Prerequisites: NS 210 and 211 or consent of the School.

NS 375 Native Health Issues

★3 (*fi 6*) (either term, 3-0-0). This course is designed to introduce students to selected contemporary health care issues in Alberta Metis and Indian communities. A description of the existing health status of these populations will facilitate exploration of socio-economic issues of disease prevention, illness treatment and health promotion. Concepts of health, illness and disease from several points of view will provide a foundation for discussion of issues associated with Native control of health care planning delivery. Prerequisites: NS 210 and 211 or consent of the School.

NS 380 Selected Topics in Native Studies

★3 (*fi 6*) (either term, 3-0-0). Prerequisites: NS 210 and 211 or consent of the School.

NS 390 Community Research Methods

★3 (*fi 6*) (either term, 3-0-0). An introduction to the basic concepts, principles, and issues in the area of community research. The objective of the course is to both apply and critique a range of research methods and to describe different facets of a community. Research methods, particularly in relation to the oral traditions of Indigenous peoples, will be a focus of the course. Prerequisites: NS 210 and 211 and one other 300-level NS course.

NS 403 Selected Topics in Native Studies

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: One 300-level course or consent of the School.

NS 404 Selected Topics in Native Studies

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: One 300-level course or consent of the School.

NS 408 Conference Course in Native Studies

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: One 300-level course or consent of the School.

NS 409 Conference Course in Native Studies

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: One 300-level course or consent of the School.

NS 420 Negotiation Strategies

★3 (*fi 6*) (either term, 3-0-0). An exploration of the theory and practice of negotiation and mediation from different perspectives, including perspectives from the dominant society and indigenous peoples. The strategies of litigation, and coercion to overcome conflict and achieve settlements of disputes will also be examined. These negotiation theories will then be applied to concrete dispute situations in Canada, including multi-party disputes over land, governance, development of resources and the environment. This course will be taught in a seminar format. Prerequisite: NS 320 or 340 or consent of the School.

NS 430 Native Land Use Research and Planning

★3 (*fi 6*) (either term, 3-0-0). This course will approach land use research and planning as it applies specifically to traditional Native land use. Two perspectives will be considered. Native land use research will be examined to demonstrate land use and occupancy to support Native land claims. Planning the use of Native lands and resources by incorporating traditional and contemporary usage and management methods into land use plans will be the second thrust. Included in the course are: the land claims process; control of land and management of resources; land use planning in the context of Native self-government; and the roles of resource development and the traditional sector of Native economies. Issues such as Native participation in the co-management of resources affecting traditional Native lands and economies, the cultural applications of land use research and indigenous values, and practices of land use will also be covered. Prerequisite: One 300-level course or consent of the School.

NS 440 Treaties and Indigenous Land Claims Agreements

★3 (*fi 6*) (either term, 3-0-0). An exploration of the contemporary issues associated with treaties and indigenous land claims agreements. The background, negotiations, and implementation of post-1867 Indian Treaties and modern agreements in Canada will be one focus for the course. Another focus will be the experiences of indigenous peoples with Treaties elsewhere in the world, such as the Treaty of Waitangi in New Zealand and selected Indian Treaties in the United States of America. This course will be taught in a seminar format. Prerequisite: NS 340 or 390 or consent of the School.

NS 445 Community Development Processes

★3 (*fi 6*) (either term, 3-0-0). In a seminar, students will identify, analyze and integrate community development philosophy, principles and practice. The relevance of traditional community development models to Native communities will be critically examined in light of the recent experiences of Native communities themselves. Prerequisites: NS 211 and one 300-level course (NS 330 or NS 345 recommended).

NS 470 Metis Politics

★3 (*fi 6*) (either term, 3-0-0). This seminar concentrates on recent events, processes, and issues. It examines the political attitudes, opinions, and activities of Metis peoples, as well as organizations and their leaders. Similarities between the politics of Metis and Indian collectivities are explored. Considerable attention is given to the strategy and tactics employed by Metis in dealing with the provincial and federal governments. Prerequisite: NS 370 or History 369 or consent of the School. POL S 100 or 320 or 321 strongly recommended.

NS 480 Metis/Indian/Inuit Issues Seminar

★3 (*fi 6*) (either term, 3-0-0). A seminar in which an examination is made of current issues facing indigenous peoples. Topics are selected from contemporary developments in major areas of interest including: educational and vocational implications of land claims and self government settlements; Metis, Indian and Inuit perspectives on the environment, development, and cultural arts. Emphasis is given to the comparative analysis of such issues at the regional, national and international levels. Prerequisite: One 300-level course or consent of the School.

NS 490 Community-Based Research

★3 (*fi 6*) (either term, 0-3s-0). A seminar exploring the issues in the area of community-based research. The course will be organized primarily around the examination of case studies. Methodological concerns will focus on the political, cultural, ethical, and practical aspects of conducting community-based research in conjunction with Native groups and communities. Prerequisite: NS 390.

NS 499 Research Project

★3 (*fi 6*) (either term, 0-0-3). The research project is designed to provide students with a variety of options for carrying out their own research. The specific route taken will depend upon the resources of the School, opportunities available in the community, and the skills of the student. While the program is intended to be flexible, the main route around which students may design their projects will be research conducted in conjunction with a local native organization. Prerequisite: consent of the School of Native Studies. Normally consent will not be given without credit in NS 390.

211.166 Neuroscience

Faculty of Medicine and Oral Health Sciences

Note: Additional courses in Neuroscience are offered by members of the division through individual departments such as Pharmacology, Physiology, Psychiatry, Psychology, Surgery, and Zoology.

211.166.1 Undergraduate Courses**NEURO 450 Honors Tutorial**

★3 (*fi 6*) (either term, 3-0-0). A tutorial course for fourth-year students in the Honors program in Neuroscience. Each student will participate in a series of tutorials on a selected topic with a member of the Division of Neuroscience. Completion of this course requires an oral presentation to an examining committee. Prerequisites: PMCOL 371, PHYSL 372, and PSYCO 377. Only open to Honors students.

NEURO 451 Honors Research

★3 (*fi 6*) (either term, 0-0-3). Fourth-year students in the Honors program in Neuroscience will pursue a research project under the supervision of a member of the Division of Neuroscience. Completion of this course requires a written report of the project and an oral presentation to an examining committee. Prerequisites: PMCOL 371, PHYSL 372, and PSYCO 377. Only open to Honors students.

NEURO 472 Neuroscience II: Systems

★3 (*fi 6*) (second term, 3-0-0). Lectures presented by the Faculty of Science and the Faculty of Medicine and Oral Health Sciences on visual and somatosensory systems, motor control via reflexes and central pattern generators; homeostasis, control of feeding, drinking, temperature and reproduction; neurobehavioral aspects of attention, arousal, cognition, memory and cerebral asymmetry. Prerequisite: PHYSL 210 or PSYCO 275 or ZOOL 241 or equivalent.

211.166.2 Graduate Courses**NEURO 500 Research in Neuroscience**

★6 (*fi 12*) (full session, 0-0-6). A practical course in the neurosciences where students spend two months in each of at least three research laboratories approved by the Division's Graduate Committee. Students are expected to complete a research project, supervised by a member of the Division, in each of the research areas chosen. Students are evaluated on both their performance in the laboratory and reports written. Prerequisite: consent of the Division.

NEURO 503 Seminar in Neuroscience

★0 (*fi 2*) (full session, 0-1s-0). Neuroscientists from the University of Alberta and other institutions present their research findings and review recent literature in neuroscience.

NEURO 603 Graduate Colloquium in Neuroscience

★3 (*fi 6*) (second term, 0-2s-0). Graduate students present review seminars or lead discussions based on required readings in the neurosciences. Coordinated by a member of the Division. Division members are invited to attend.

211.167 Norwegian

(Division of Germanic Languages, Literatures, and Linguistics)
Department of Modern Languages and Comparative Studies
Faculty of Arts

S NORW 100 Elementary Norwegian

★6 (*fi 12*) (full session, 3-0-2). Designed to give basic practical skill in everyday spoken and written Norwegian. The oral approach, using the laboratory, is followed. Formerly SCAND 100.

S NORW 200 Second-Year Norwegian

★6 (*fi 12*) (full session, 3-0-1). Reading and study of selected texts in Norwegian literature and culture. Composition and conversation. Prerequisite: NORW 100 or consent of Department. Formerly SCAND 300.

211.168 Nursing

Faculty of Nursing

211.168.1 Undergraduate Courses**NURS 105 Anatomy**

★3 (*fi 6*) (first term, 3-0-0). Introduction to the structure of the human body.

NURS 108 Elementary Physiology

★6 (*fi 12*) (full session, 3-0-0). An introduction to human physiology. Available only to nursing students. Note: NURS 108 and PHYSL 162 may *not* both be taken for credit.

NURS 109 Integrated Medical Microbiology

★3 (*fi 6*) (second term, 3-0-0). Relevant medical microbiology concepts integrated into nursing through context-based learning.

NURS 120 Integrated Psychology I

★3 (*fi 6*) (first term, 3-0-0). Introductory psychology concepts integrated into nursing through context-based learning.

NURS 121 Integrated Psychology II

★3 (*fi 6*) (second term, 3-0-0). Continuation of the study of psychology concepts integrated into nursing through context-based learning.

NURS 130 Integrated Sociology

★3 (*fi 6*) (second term, 3-0-0). Introductory sociology concepts integrated into nursing through context-based learning.

NURS 190 Nursing in Context A

★7 (*fi 14*) (first term, 0-6s-3 in 10 weeks). Introduction to the professional discipline of nursing, communication theory, and context-based learning. The primary health care emphasis is on health promotion and disease prevention across the life span. Restoration and rehabilitation will be introduced. Health assessment and basic nursing skills will be introduced.

NURS 191 Nursing Practice I

★3 (*fi 6*) (first term, 0-4s-21c in 4 weeks). Beginning nursing practice with a focus on health promotion and interaction with clients across the life span in a variety of non-traditional settings. Prerequisite: NURS 190.

NURS 194 Nursing in Context A1

★5 (*fi 10*) (second term, 0-6s-3 in 7 weeks). A continuation of the study of concepts introduced in NURS 190 with a focus on teaching and learning principles and increased health assessment and basic nursing skills. Prerequisites: NURS 190, NURS 191.

NURS 195 Nursing Practice II

★6 (*fi 12*) (second term, 0-3s-24c in 7 weeks). Nursing practice includes health status assessment of clients and appropriate health promotion and disease prevention interventions. Practice occurs in settings where clients live or in community agencies (non-acute) where services to clients are offered. Prerequisites: NURS 190, NURS 191.

NURS 200 Nursing II

★3 (*fi 6*) (either term, 3-0-0). Focuses on nursing care of individuals.

Selected nursing roles, strategies and factors that influence role implementation will be explored. Prerequisite: NURS 107.

NURS 201 Teaching and Learning

★3 (*fi 6*) (first term, 3-0-0). Introduction to theories and practice of teaching and learning. Focus will be on the process of teaching and learning situations in the health care field. Prerequisite: NURS 101. Prerequisite or corequisite: PSYCO 104.

NURS 202 Pathophysiology

★3 (*fi 6*) (first term, 3-0-0). Introduction to pathological processes. The course will focus on the general principles of disease and disorders that affect the body as a whole. Prerequisite: NURS 108 or PHYSL 162.

NURS 203 Nursing Care of Individuals Within Families: Adult/Older Adult

★9 (*fi 18*) (either term, 4-15c-0). Theory and practice related to nursing care of adults and older adults and their families in medical-surgical settings. Students will have the opportunity to interact with a family through home visits. Prerequisites for Collaborative students: NURS 103, 107. Prerequisites or corequisites: NURS 201, 202. Prerequisites for RPN to BScN students: NURS 204, 210.

NURS 204 Nursing Care of Individuals Within Families: Child-Bearing/Child-Rearing

★9 (*fi 18*) (either term, 4-15c-0). Theory and practice related to nursing care of individuals in child-bearing and child-rearing families in community and hospital settings. Students will have the opportunity to interact with a family through home visits. Prerequisites for Collaborative students: NURS 103, 107. Prerequisites or corequisites: NURS 201, 202.

NURS 205 Clinical Nursing Practice II

★6 (*fi 12*) (Intersession - minimum of 200 hours). Includes theory and practice components. The primary focus will be client-centred nursing care of hospitalized adults and children. Prerequisites for Collaborative students: NURS 107, 200, 202, 203, 204. Prerequisites for RPN to BScN students: NURS 203, 204, 368.

NURS 210 Professional Nursing

★3 (*fi 6*) (either term, 3-0-0). Focuses on the profession of nursing, including historical perspectives, roles, functions and strategies; levels of organization; models of nursing, and trends in the health care system. Factors influencing health practices across the lifespan will also be examined.

NURS 211 Health Sciences

★3 (*fi 6*) (first term, 3-0-0). A combined course including three components: Pathophysiology, nursing pharmacotherapeutics, and microbiology. Note: Students may receive advanced standing for previous course work for any of the three components.

NURS 300 Nursing III

★3 (*fi 6*) (either term, 3-0-0). Focuses on nursing care related to families, with emphasis on selected nursing roles, strategies and factors that influence role implementation. Prerequisite for Collaborative students: NURS 205. Prerequisite for Post-RN students: NURS 319 or equivalent. Prerequisites for RPN to BScN students: NURS 205, 210, 319 or equivalent.

NURS 301 Nursing Research

★3 (*fi 6*) (either term, 3-0-0). Introduction to the process of research through a comparative analysis of selected studies exemplifying different theoretical, methodological, and analytical approaches. Emphasis will be on the communicability of research, the needs of the research consumer, and the development of skills of critical appraisal. Prerequisite or corequisite: Statistics elective.

NURS 302 Community Based Nursing of Families and Groups

★9 (*fi 18*) (either term, 4-15c-0). Theory and practice related to the health promotion of families and small groups within the context of primary health care. Attention also will be given to nursing care of families experiencing episodic or continuing health concerns. Students will develop skills in utilizing a variety of theories and models to assist families and small groups in community settings toward optimal functioning. Prerequisite or corequisite for all students: NURS 300, Family Elective. Additional prerequisite for Post-RN students: NURS 319 or equivalent. Additional prerequisites for RPN to BScN students: NURS 205, 319, or equivalent.

NURS 303 Mental Health Nursing

★9 (*fi 18*) (either term, 4-15c-0). The focus is on theory and practice related to the promotion of mental health and care of clients with mental health problems and mental health disorders. Students will further develop and integrate their skills in promoting optimal client functioning in hospital and community settings. Prerequisites: PSYCO 105; NURS 201, 202, 203, 204. In addition, successful completion of NURS 205 is required for students proceeding to Year Three.

NURS 319 Developmental Assessment

★3 (*fi 6*) (either term, 3-0-0). Focus is on the assessment of age-appropriate human physical, cognitive and social development from conception to death.

NURS 340 Advanced Interpersonal Communication Skills: The Process for Promoting Health

★4 (*fi 8*) (either term, 3-0-1). Development of advanced interpersonal communication skills for the teaching and health counselling roles assumed by health professionals. The students will have the opportunity to relate course content to their own area of interest through discussion and practice. Prerequisite: PSYCO 104 or equivalent.

NURS 368 Health Assessment

★4 (*fi 8*) (either term, 3-0-3). The focus is on the health assessment of the well adult, with normal aging modifications. The course provides a beginning foundation of assessment skills and technologies necessary for determining client health status within the context of a nursing framework. Factors influencing lifestyles and personal health practices will be included.

NURS 377 Nursing Care of the Critically Ill Adult in Emergency and Intensive Care Units I

★3 (*fi 6*) (either term, 8-24c-0, 8 weeks). Introduction to assessment and care of patients in emergency and intensive care. Includes classroom and laboratory instruction and supervised practice in a community general hospital.

NURS 378 Nursing Care of the Critically Ill Adult in Emergency and Intensive Care Units II

★3 (*fi 6*) (either term, 8-24c-0, 8 weeks). Continuation of introduction to assessment and care of emergency and intensive care patients. Includes classroom and laboratory instruction and supervised practice in a community general hospital.

NURS 400 Nursing IV

★4 (*fi 8*) (either term, 4-0-0). Theory and practice related to nursing care of aggregates, with emphasis on principles of epidemiology, health promotion and primary health care. Selected nursing roles, strategies and factors that influence role implementation will be included. Prerequisite for Collaborative students: NURS 300; Prerequisites or corequisites: NURS 301, 302, 303. Prerequisite for Post-RN and RPN to BScN students: NURS 300; Prerequisites or corequisites: NURS 301, 302. There is a consolidated final exam in this course.

NURS 401 Nursing Management

★4 (*fi 8*) (either term, 3-0-3). Introduction to the theory and practice of management applied to settings where nurses work. Emphasis will be placed on theories of organization, management, and leadership, as well as on selected nursing systems and workforce issues. The practice component will include a variety of learning experiences in health care settings or in seminars and simulations. Prerequisites for Collaborative students: NURS 300, 301, 302, 303. Prerequisites for Post-RN students: NURS 300, 301, 302. Prerequisites for RPN to BScN students: NURS 300, 302. Prerequisite or corequisite: NURS 301.

NURS 402 Nursing Trends and Issues

★2 (*fi 4*) (either term, 0-2s-0). A variety of current professional, social, political, and global trends and issues affecting the nursing profession and health care system within Canada will be addressed. Students will have the opportunity to examine, analyze, and evaluate selected trends and issues. Prerequisites: NURS 300, 302. Additional prerequisite for Collaborative students: NURS 303.

NURS 403 Senior Nursing Elective

★9 (*fi 18*) (either term, 6-30c-0 in 7 weeks, or 3-16c-0 in 13 weeks). Theoretical and clinical course focusing on knowledge and practice in a selected area of nursing. Prerequisites for Collaborative students: NURS 300, 301, 302, 303. Prerequisites for Post-RN students: NURS 300, 301, 302. Prerequisites for RPN to BScN students: NURS 203, 204, 205, 210, 211, 368.

NURS 404 Senior Nursing Practicum

★5 (*fi 10*) (either term, 0-35c-0 for 7 weeks). Clinical practicum which provides students with the opportunity to practise nursing with a selected group of clients in a particular setting. Focus will be on integration of previous learning and transition to the graduate role. Prerequisites: NURS 301, 302, 303, 403.

NURS 453 Nursing Care of the Normal and High Risk Newborn

★3 (*fi 6*) (first term, 3-6c-0). Application of physiological principles to the nursing care of the newborn, preterm and sick infant. The effect of ongoing psychological and social needs in relations with the mother and father. The management of life-support systems in the care of the immature or sick newborn. Prerequisite: consent of Instructor.

NURS 493 Nursing Intervention in Neonatal Intensive Care

★3 (*fi 6*) (second term, 3-6c-0). Nursing care of the high risk infant in a neonatal intensive care unit. Trends and issues in neonatal care will be examined with emphasis on the impact of acute and chronic illness on the physical and psycho-social well-being of the family. Prerequisite: NURS 453 or consent of Instructor.

NURS 498 Special Studies in Nursing

★variable (*fi variable*) (either term, variable).

211.168.1.1 Courses beginning in 1998–99

NURS 290 Nursing in Context B

★5 (*fi 10*) (first term, 0-6s-3 in 7 weeks). Within the context of primary health care, the focus shifts to restoration, rehabilitation and support of clients experiencing chronic and less acute variances in health. Discussion related to health promotion and disease prevention continues. Intermediate health assessment and nursing skills will be introduced. Prerequisites: NURS 194, NURS 195.

NURS 291 Nursing Practice III

★7 (*fi 14*) (either term, 0-3s-28c in 7 weeks). Nursing practice will focus on restoration, rehabilitation and support (including health promotion and disease prevention) of clients with chronic and less acute variances in health across the life span. Practice will occur primarily in primary level acute care centres and continuing care agencies. (See Note at end of section.) Prerequisites: NURS 194, NURS 195.

NURS 294 Nursing in Context B1

★5 (*fi 10*) (second term, 0-6s-3 in 7 weeks). Continuation of NURS 290 with increasing situational complexity. Prerequisites: NURS 290, (NURS 291 or NURS 295).

NURS 295 Nursing Practice IV

★7 (*fi 14*) (either term, 0-3s-28c in 7 weeks). Nursing practice will focus on restoration, rehabilitation and support (including health promotion and disease prevention) of clients with chronic and less acute variances in health across the life span. Practice will occur in homes or in community-based settings. Prerequisites: NURS 194, NURS 195.

211.168.1.2 Courses beginning in 1999–2000

NURS 390 Nursing in Context C

★5 (*fi 10*) (first term, 0-6s-3 in 7 weeks). Within the context of primary health care focus is on restoration, rehabilitation and support of clients experiencing more acute variances in health. Discussion related to health promotion and disease prevention continues. Advanced health assessment and nursing skills will be introduced. Prerequisites: NURS 291, NURS 294, NURS 295.

NURS 391 Nursing Practice V

★7 (*fi 14*) (either term, 0-3s-28c in 7 weeks). Nursing practice will focus on restoration, rehabilitation and support (including health promotion and disease prevention) of clients experiencing more acute variances in health across the life span. Practice will occur in primary, secondary and tertiary level acute care setting. Prerequisites: NURS 291, NURS 294, NURS 295.

NURS 392 Health Assessment

★4 (*fi 8*) (second term, 0-3s-3). Health assessment of clients across the lifespan (newborns, children, adolescents, adults, and older adults). Focus is on normal findings and normal changes with aging. A foundation of assessment skills and technologies necessary for determining client health status within the context of a nursing framework will be included.

NURS 394 Nursing in Context C1

★5 (*fi 10*) (second term, 0-6s-3 in 7 weeks). Continuation of NURS 390 with increasing situational complexity. Prerequisites: NURS 390, (NURS 391 or NURS 395).

NURS 395 Nursing Practice VI

★7 (*fi 14*) (either term, 0-3s-28c in 7 weeks). Nursing practice will focus on restoration, rehabilitation and support (including health promotion and disease prevention) of clients across the lifespan experiencing more acute variances in health. Practice will occur in homes or in community-based setting. Prerequisites: NURS 291, NURS 294, NURS 295.

211.168.1.3 Courses beginning in 2000–2001

NURS 490 Nursing in Context D

★5 (*fi 10*) (either term, 0-6s-3 in 7 weeks). A comprehensive approach to primary health care components in the care of clients in complex, ambiguous situations. Case management and multidisciplinary leadership skills will be emphasized. Students may have the opportunity to lead a multidisciplinary student group. Prerequisites: NURS 391, NURS 394, NURS 395.

NURS 491 Nursing Practice VII

★7 (*fi 14*) (either term, 0-3s-28c in 7 weeks). Management and care of clients in ambiguous, complex, situations occurring over a variety of settings. Prerequisites: NURS 490.

NURS 494 Nursing in Context D1

★3 (*fi 6*) (either term, 0-7s-3 in 4 weeks). Synthesis and focus of nursing knowledge and application of nursing research in a specific area of practice. Prerequisites: NURS 391, NURS 394, NURS 395.

NURS 495 Nursing Practice VIII

★9 (*fi 18*) (either term, 0-1s-34c in 10 weeks). Comprehensive approach to professional practice of nursing in an area of special interest to the student. Prerequisites: NURS 494.

NURS 496 Nursing Research and Statistics

★6 (*fi 12*) (second term, 0-6s-0). Introduction to the process of research through a comparative analysis of selected studies exemplifying different theoretical, methodological, and analytical approaches. Emphasis will be on the communicability of research, the needs of the research consumer, and the development of skills of critical appraisal. Also included are introduction to descriptive and inferential statistics, and the application of statistical methods to nursing problems.

Note: Definitions of Acute Care Practice Settings (Alberta Health 1994 [Core Health Services in Alberta]):

- Primary Level Acute Care Services include obstetrical, prenatal, paediatric, geriatric, mental health, pharmaceutical, medical, surgical, rehabilitative and palliative care offered by qualified service providers.
- Secondary Level Acute Care Services include more complex diagnostic and treatment services delivered by providers with specialist training and should be available to all people either in their region or from a neighboring region.
- Tertiary Level Acute Care Services include sophisticated diagnostic and highly specialized treatment services provided on referral from physicians and other health professionals.

211.168.2 Graduate Courses

NURS 502 Nature of Nursing Knowledge

★3 (*fi 6*) (either term, 3-0-0). Enquiry into the nature, scope, and object of nursing knowledge; the distinct contribution of nursing art, philosophy, history, and science. Prerequisite: consent of Instructor.

NURS 503 Design and Conduct of Nursing Research

★3 (*fi 6*) (either term, 3-0-0). Experimental, quasi-experimental, historical, and descriptive approaches to the investigation of nursing phenomena.

NURS 505 Advanced Clinical Nursing I

★6 (*fi 12*) (either term, 0-3s-6). Advanced clinical experience in nursing with emphasis on analysis and use of nursing theories/frameworks. (The hours cited should be regarded as minimum. Individual students may be required to complete additional clinical practice requirements.) Prerequisite: consent of Instructor.

NURS 506 Advanced Clinical Nursing II

★6 (*fi 12*) (either term, 0-3s-6). Advanced clinical experience in nursing with emphasis on process and activity patterns. (The hours cited should be regarded as minimum. Individual students may be required to complete additional clinical practice requirements.) Prerequisite: consent of Instructor.

NURS 511 Physiology of Reproduction

★3 (*fi 6*) (second term, 0-3s-0). An introduction to understanding the physiology of human reproduction and the pathophysiology of some complications of the reproductive process, particularly in pregnancy.

NURS 514 Health Care of Women in the Reproductive Years

★6 (*fi 12*) (second term, 0-3s-6c). Preconceptional factors influencing pregnancy (including family planning), educational and health assessment, and identification of risk in mothers and families in the prenatal period. In clinical practice, the emphasis will be on the prenatal period. Consent of Instructor required.

NURS 517 Care of the Family During Labor, Delivery, and the Postpartum Period

★6 (*fi 12*) (first term, 0-3s-8c). The course will focus on the nursing care needs of selected low-risk families during labor, delivery, and the postpartum period. Prerequisite: NURS 514 or consent of Instructor.

NURS 518 Social and Cultural Context of Reproductive Care

★3 (*fi 6*) (second term, 0-3s-3c). An exploration of the major trends in reproductive care, the cultural influences on care, and ethical issues related to reproductive care.

NURS 519 Midwifery Practicum

★6 (*fi 12*) (either term, 0-40c-0). A six-week intensive clinical experience in midwifery care of low-risk families based on an advanced understanding of midwifery principles. Each student will be required to care for a minimum of 25 mothers in labor and conduct the delivery under the guidance of a physician and/or nurse-midwife. Deliveries will be followed-up in the initial postpartum period. Prerequisites: NURS 514 and 517.

NURS 521 Advanced Perinatal Physiology

★3 (*fi 6*) (either term, 3-0-0). Basic and clinical lectures on research on neonatal physiology and health problems of the infant with reference to

current therapeutics including pharmacology. Prerequisite: PAEDS 501 or consent of Instructor.

NURS 524 Advanced Neonatal Intensive Care Nursing

★6 (*fi 12*) (either term, 0-3s-6). Students will have an opportunity to integrate theory from the psychosocial and physiological perspectives with the care of ill newborns and their families with emphasis on anticipatory guidance, education, and health promotion. Clinical placement will be in a Level III nursery with follow-up after discharge of the infant. Prerequisites: NURS 505 and consent of Instructor.

NURS 529 Advanced Neonatal Intensive Care Nursing Practicum

★6 (*fi 12*) (Interession, 0-40c-0). During this experience in Interession the students will acquire skill and experience in functioning in an advanced role under the preceptorship of selected nurses and neonatologists working in an expanded role. Prerequisite: NURS 524.

NURS 531 Community Health: Practice and Research Perspectives

★3 (*fi 6*) (second term, 0-3s-0). Concepts and research concerning health promotion and disease prevention in community settings will be addressed. Emphasis will be given to implications for multidisciplinary practice from epidemiology, public policy, development, and program planning and evaluation. Theoretical content will pertain to multiple client groups in the community as well as environmental and social conditions.

NURS 532 Family Health and Wellness

★3 (*fi 6*) (either term, 0-3s-0). This course is focussed on models of family health and related research. Both the health of families and the family's influence on health will be examined. Measurement and assessment issues will be discussed. Applications to nursing and other health-related disciplines will be explored. Co-taught by Faculty of Nursing and Department of Human Ecology.

NURS 534 Advanced Practice in Community Health Nursing

★6 (*fi 12*) (second term, 0-3s-6c). Concepts and research concerning nursing and health promotion in community settings will be addressed with emphasis given to implications for the nursing role. Theoretical content will pertain to multiple client groups in the community. Students will select one level of client (population, group, aggregate, or families) for nursing practice within a community health model.

NURS 540 Qualitative Methods for Nursing Research

★3 (*fi 6*) (either term, 3-0-0). An introduction and overview of qualitative research methods (primarily ethnography, ethnoscience and participant observation) and their application for nursing research. Prerequisite: consent of Instructor.

NURS 541 Research and Clinical Perspectives in Parent and Infant/Child Assessment and Intervention

★3 (*fi 6*) (second term, 0-3s-0). This multidisciplinary course will provide research-based knowledge, techniques, tools, and skills in caregiver-infant/child assessment, and reliability in the use of accepted standardized Nursing Child Assessment Satellite Training (NCAST) research/assessment tools (Barnard, 1994).

NURS 544 Research and Practice in Parent and Infant Assessment and Intervention

★6 (*fi 12*) (second term, 0-3s-6c). This multidisciplinary course will provide research-based knowledge, techniques, tools, and skills in caregiver-infant/child assessment, and reliability and practice in the use of accepted standardized Nursing Child Assessment Satellite Training (NCAST) research/assessment tools (Barnard, 1994).

NURS 550 Advanced Seminar in Trends in Nursing

★3 (*fi 6*) (either term, 0-3s-0). Advanced analysis of trends, problems and issues in the field of nursing, with emphasis on its interrelationships with other components of the health care system. Prerequisite: consent of Instructor.

NURS 551 Health Care Ethics

★3 (*fi 6*) (either term, 3-0-0). An interdisciplinary course which will explore selected topics in bioethics. Included will be examination of ethical theories and principles within the context of clinical practice (nursing, medicine, rehabilitation, medicine, dentistry, pharmacy), and learning experiences to improve moral reasoning and ethical decision-making.

NURS 560 Topics in Advanced Study in Nursing

★variable (*fi variable*) (either term, variable). An elective course aimed at developing in-depth knowledge regarding a topic(s) related to advanced-level nursing. Learning experiences may include clinical experience. Normally, NURS 502, 503, and 505 are required prerequisites.

NURS 561 Guided Individual Study in Nursing

★variable (*fi variable*) (variable term, variable). A course designed for in-depth, individual study of a topic related to advanced-level nursing. Learning experiences may include clinical experience.

NURS 562 Guided Study in Nursing

★3 (*fi 6*) (either term, 3-0-0). A course designed for in-depth study, by

non-MN students, of a topic(s) directly or indirectly related to advanced level nursing.

NURS 599 Thesis Seminar

★1 (*fi 2*) (either term, 0-2s-0). Required for one academic year (two terms) of the Master of Nursing program. Prerequisite: consent of Instructor.

NURS 600 Theory Development in Nursing

★3 (*fi 6*) (either term, 0-3s-0). Exploration of influence and implications of various nursing models, paradigms, and conceptualizations of nursing practice on the development and structure of the discipline of nursing. Prerequisite: consent of Instructor.

NURS 610 Nursing as a Practical Science

★3 (*fi 6*) (either term, 0-3s-0). Enquiry into the nature of nursing science and the relationship between nursing science and nursing art, with particular attention to nursing as a practical science. Prerequisite: consent of Instructor.

NURS 660 Topics in PhD Studies in Nursing

★variable (*fi variable*) (either term, variable). A course aimed at developing in-depth knowledge regarding a topic(s) related to PhD-level nursing. Learning experiences may include clinical experience.

NURS 661 Guided Individual Study in Nursing

★variable (*fi variable*) (either term, variable). A course designed for in-depth, individual study of a topic related to PhD-level nursing. Learning experiences may include clinical experience.

NURS 683 Design Problems in Nursing Research

★3 (*fi 6*) (either term, 0-3s-0). Appraisal of laws of scientific inquiry and designs used in nursing research. Prerequisite: consent of Instructor.

NURS 684 History and Politics of Nursing

★3 (*fi 6*) (either term, 0-3s-0). Analysis of the history and politics of the development of the nursing profession, with particular reference to Canadian nursing. Prerequisite: consent of Instructor.

NURS 699 Dissertation Seminar

★1 (*fi 2*) (either term, 0-1s-0). For PhD in Nursing students, registration required for two terms. Opportunity for discussion of proposed and ongoing research.

211.169 Nutrition

Department of Agricultural, Food and Nutritional Science
Faculty of Agriculture, Forestry and Home Economics

Note: See also Animal Science, Dairy Science, and Nutrition and Food Sciences listings for related courses.

The following table lists renumbered courses effective 1995/96.

Old	New	Old	New
NU FS 301	NUTR 301	NU FS 302	NUTR 302

211.169.1 Undergraduate Courses

[S] NUTR 100 Introductory Human Nutrition

★3 (*fi 6*) (first term, 3-0-0). Principles of nutrition. The need for and functions of the major nutrients for humans. Cannot be taken by students with credit in any Biochemistry or other Nutrition course.

[S] NUTR 260 Introductory Animal Nutrition

★3 (*fi 6*) (first term, 3-0-3). Principles of nutrition. The need for and functions of the major nutrients for animals. Laboratory will involve diet formulation and discussion of feeds and feeding practices. Prerequisite: ★3 in university-level biology or chemistry. Cannot be taken by students with credit in NUTR 301 or equivalent.

NUTR 301 Energy, Carbohydrates, Lipids and Proteins

★3 (*fi 6*) (second term, 3-0-3). Fundamentals of nutrition with emphasis on energy, carbohydrates, lipids, and proteins. Laboratory emphasizes analytical techniques. Laboratory identical to NU FS 372. Students cannot obtain credit in both NUTR 301 and NUTR 303. Prerequisite: ★3 in Biochemistry.

NUTR 302 Vitamins and Inorganic Elements

★3 (*fi 6*) (first term, 3-0-3). Fundamentals of nutrition with emphasis on vitamins and inorganic elements. Aspects of nutritional assessment will be emphasized in the laboratory. Students cannot obtain credit in both NUTR 302 and NUTR 304. Prerequisite: ★3 in Biochemistry.

[S] NUTR 303 Energy, Carbohydrates, Lipids and Proteins

★3 (*fi 6*) (second term, 3-0-0). Fundamentals of nutrition with emphasis on energy, carbohydrates, lipids, and proteins. Students cannot obtain credit in both NUTR 301 and NUTR 303. Prerequisite: ★3 in Biochemistry.

[S] NUTR 304 Vitamins and Inorganic Elements

★3 (*fi 6*) (first term, 3-0-0). Fundamentals of nutrition with emphasis on vitamins and inorganic elements. Students cannot obtain credit in both NUTR 302 and NUTR 304. Prerequisite: ★3 in Biochemistry.

S NUTR 365 Applied Animal Nutrition

★3 (fi 6) (second term, 3-0-3). Feeds and feeding of swine, poultry, and ruminants. Laboratories will involve feeding projects in applied animal nutrition. Prerequisites: NUTR 260, 301 or 302.

S NUTR 410 Nutritional Toxicology

★3 (fi 6) (first term, 3-0-0). A lecture and reading course in nutritional toxicology. Provides students with understanding of the metabolic consequences of exposure to foodborne chemicals, therapeutic agents, and alcohol. Prerequisite: ★3 in Biochemistry.

211.169.2 Graduate Courses

Note: See also Agriculture, Food, and Nutritional Science listings for related courses.

S NUTR 504 Experimental Procedures in Nutrition and Metabolism

★3 (fi 6) (either term, 0-0-6). Current methodologies in nutrition and metabolism. Prerequisites: NUTR 301 and 302 or consent of Instructor.

S NUTR 670 Current Topics in Nutrition and Metabolism

★3 (fi 6) (either term, 0-3s-0). A reading and discussion course designed to develop skills of critical thinking, based on detailed review of current literature in nutrition and metabolism. Selected topics in digestive physiology, fat/carbohydrate/protein metabolism, vitamins/minerals, dietary modulation of function or ruminant nutrition. May be taken for credit more than once.

S NUTR 680 Doctoral Seminar

★3 (fi 6) (second term, 0-3s-0). Reports and discussion by staff and graduate students to provide PhD candidates with experience and understanding in advanced topics in nutrition.

211.70 Reserved

211.171 Nutrition and Food Sciences

Department of Agricultural, Food and Nutritional Sciences
Faculty of Agriculture, Forestry and Home Economics

Note: See also Animal Science, Dairy Science, and Nutrition listings for related courses.

The following table lists renumbered courses effective 1993/94:

Old	New	Old	New
FD SC 100	NU FS 100	FD SC 602	NU FS 650
FD SC 101	NU FS 101	FD NU 225	NU FS 225
FD SC 283	NU FS 283	FD NU 320	NU FS 372
FD SC 353	NU FS 353	FD NU 321	NU FS 374
FD SC 354	NU FS 454	FD NU 323	NU FS 323
FD SC 361	NU FS 361	FD NU 427	NU FS 427
FD SC 363	NU FD 363	FD NU 461	NU FS 461
FD SC 372	NU FS 372	FD NU 463	NU FS 463
FD SC 400	NU FS 400	FD NU 468	NU FS 468
FD SC 402	NU FS 402	FD NU 472	NU FS 472
FD SC 404	NU FS 404	FD NU 476	NU FS 476
FD SC 405	NU FS 405	FD NU 477	NU FS 477
FD SC 406	NU FS 406	FD NU 478	NU FS 478
FD SC 554	NU FS 554	FD NU 479	NU FS 479
FD SC 573	NU FS 573	FD NU 480	NU FS 480
FD SC 587	NU FS 587	FD NU 481	NU FS 481
FD SC 588	NU FS 588	FD NU 502	NU FS 502
FD SC 601	NU FS 601	FD NU 602	NU FS 602

The following table lists renumbered courses effective 1995/96:

Old	New	Old	New
NU FS 301	NUTR 301	NU FS 302	NUTR 302

211.171.1 Undergraduate Courses

S NU FS 100 Introduction to Food Science and Technology

★3 (fi 6) (first term, 3-0-0). An introduction to the nature of food, food technology, food safety. Not open to third- and fourth-year students in the Faculty of Agriculture, Forestry and Home Economics.

S NU FS 283 Introduction to Food Engineering

★3 (fi 6) (second term, 3-0-3). Mass and heat balances, thermodynamics. Fluid mechanics, heat and mass transfer in food systems. Prerequisites: MATH 113 or 114 and ★6 of chemistry or physics, or consent of Instructor.

S NU FS 312 Quality Assurance

★3 (fi 6) (second term, 3-0-1.5). Statistical methods in quality assurance, sampling plans, control charts, sensory evaluation and risk management in the food industry, HACCP, good manufacturing practices, food regulations, labelling requirements, and ISO 9000 standards. Prerequisite: Introductory Statistics.

NU FS 323 Trends and Traditions Influencing Dietary Patterns

★3 (fi 6) (second term, 3-0-3). Food habits as influenced by historical,

geographical, religious, cultural, and economic factors. Implications of these on food selection, menu planning, food purchasing, preparation, and intake. Corequisite: NU FS 374 or prerequisite: ★60 including a ★3 NUTR or NU FS course.

S NU FS 353 Unit Operations in Food Processing

★3 (fi 6) (first term, 3-0-3). Processes used in food manufacturing. Refrigeration, evaporation, sedimentation, centrifugation, filtration, and contact-equilibrium separation methods. Prerequisite: NU FS 283.

NU FS 361 Food Microbiology

★3 (fi 6) (first term, 3-0-3). Environmental factors affecting the growth, activity, and destruction of microorganisms in food and their application to control foodborne illness and spoilage in the food processing and food service industries. Given concurrently with NU FS 363, not open to students with credit in NU FS 363. Limited registration. Preference will be given to students in the Food Science and Technology major. Prerequisite: BIOL 107 or 108 or ★3 in Microbiology.

S NU FS 363 Food Microbiology

★3 (fi 6) (first term, 3-0-0). Environmental factors affecting the growth, activity, and destruction of microorganisms in food and their application to control foodborne illness and spoilage in the food processing and food service industries. Given concurrently with NU FS 361, not open to students with credit in NU FS 361. Prerequisite: BIOL 107 or 108 or ★3 in Microbiology.

S NU FS 372 Food Chemistry

★3 (fi 6) (either term, 3-0-3). Chemistry of food constituents. Laboratory emphasizes analytical techniques. Laboratory identical to NUTR 301. Given concurrently with NU FS 373. Not open to students with credit in NU FS 373. Prerequisites: CHEM 161 and 163.

S NU FS 373 Food Chemistry

★3 (fi 6) (either term, 3-0-0). Chemistry of food constituents. Prerequisite: CHEM 161/163. Given concurrently with NU FS 372. Not open to students with credit in NU FS 372.

NU FS 374 Food Fundamentals and Quality

★3 (fi 6) (either term, 3-0-3). Chemical, physical, and sensory properties of food products and factors affecting food quality in relation to preparation, processing, and storage of foods in the home and institution. Prerequisite or Corequisite: NU FS 372 or 373.

S NU FS 400 Undergraduate Reading Project

★3 (fi 6) (either term, 3-0-0). Individual study. Critical reviews of selected literature under the direction of a staff member. Note: For third- and fourth-year students only. Students must obtain approval from Department before registration. May be taken more than once provided topic is different.

S NU FS 401 Undergraduate Research Project

★3 (fi 6) (variable, 0-0-6). Directed laboratory study under supervision of a staff member. Note: For third- and fourth-year students only. Students must obtain approval from Department before registration. May be taken more than once provided that topic is different.

S NU FS 402 Brewing, Enology, and Food Fermentations

★3 (fi 6) (second term, 3-1s-0). Biological, biochemical, and technical aspects of microbial and fungal fermentations used in the food and beverage industries, especially the lactic acid and alcohol fermentations. Offered in alternate years. Prerequisites: MICRB 265 or NU FS 361 or 363.

S NU FS 404 Meat and Meat Products

★3 (fi 6) (second term, 3-0-3/2). Biological, biochemical, chemical, and technological aspects of the processing of meat and meat products. Prerequisite: ★3 in Biochemistry.

S NU FS 405 Postharvest Physiology and Processing of Fruits and Vegetables

★3 (fi 6) (first term, 3-0-3/2). Physiological, biochemical, and biophysical changes associated with maturation, ripening, and senescence of fruits and vegetables. Design, selection, and utilization of handling, storage, and transport facilities. Biological, biochemical, chemical, and technological aspects of processing. Offered in alternate years. Prerequisite: ★3 in introductory Biochemistry.

S NU FS 406 Processing and Storage of Cereals and Oilseeds

★3 (fi 6) (first term, 3-0-3/2). Biological, biochemical, chemical, and technological aspects of the processing of cereals and oilseeds. Offered in alternate years. Prerequisite: ★3 in introductory Biochemistry.

S NU FS 427 Food Safety

★3 (fi 6) (first term, 3-1.5s-0). Safety of the North American food supply. Principles of risk: benefit evaluations related to chemical and microbiological issues about foods. The course will emphasize current issues and perceptions relating to foods and nutrition which influence consumer acceptance of foods. Prerequisites: NU FS 361 (or 363) and 372 (or 373).

NU FS 430 Principles of Sensory Evaluation of Foods

★3 (fi 6) (either term, 3-0-3). Principles and methods of analysis of the sensory properties of foods; appearance, texture, aroma, and taste.

Physiology of sensory receptors. Applications, advantages, and limitations of sensory methods. Prerequisites: Introductory statistics and NU FS 372 or 373.

NU FS 431 Fundamentals of Product Development

★3 (fi 6) (either term, 3-0-0). Conversion of ingredients into formulated food products for large scale industrial and institutional production. Prerequisite: NU FS 372 or 373.

D NU FS 452 Nutritional Aspects of Chronic Human Diseases

★3 (fi 6) (second term, 3-0-0). A lecture and reading course for senior undergraduate students which will address the scientific basis for nutritional intervention in chronic human disease. Prerequisites: NUTR 301 (or 303) and 302 (or 304), or consent of Instructor.

S NU FS 454 Unit Operations in Food Preservation

★3 (fi 6) (second term, 3-0-3). Processes used in food preservation. Dehydration, refrigeration and freezing, sterilization and canning, irradiation. Effect of processing on food properties. Prerequisites: NU FS 283, NU FS 361 (or 363) and 372 (or 373), or consent of Instructor.

D NU FS 461 Foodservice Systems Management

★3 (fi 6) (first term, 3-0-4). Operational techniques and special problems encountered during the preparation and service of food in quantity, in both commercial operations and foodservice establishments. The laboratory sessions will provide experience in quantity food production. Prerequisites: NU FS 374 and 323.

D NU FS 463 Foodservice Facilities: Planning and Design

★3 (fi 6) (second term, 3-0-0). The systems approach in planning foodservice facilities. The interrelationship between the scientific approach, the management approach, and quantity food production technique in planning and designing food service systems. Prerequisite: NU FS 461.

D NU FS 468 Clinical Dietetics

★3 (fi 6) (either term, 3-0-3). Basic principles of nutrition in clinical situations. The role of diet in the management of various diseases. The laboratory sessions include practical experience in providing individualized nutritional care for clients from various cultural backgrounds. Prerequisite: NUTR 302. Corequisite: NUTR 301 (or 303).

NU FS 472 Coordinated Practical Program

★3 (fi 6) (second term, 0-1s-8). Supervised practical experience in selected areas of interest. For senior Foods and Nutrition majors with permission of the Department Chair.

D NU FS 476 Advanced Clinical Dietetics

★3 (fi 6) (either term, 3-0-3). The principles of diet therapy in selected areas of current interest. Emphasis on case studies, research, and practical problems in clinical dietetics. Prerequisite: NU FS 468.

D NU FS 477 Nutrition in the Community

★3 (fi 6) (second term, 3-0-3). Examination of nutrition problems in contemporary communities. The application of basic concepts of food and nutrition to community nutrition problems. Discussion of nutrition programs and resources. Prerequisites: NUTR 301 (or 303) and NUTR 302 (or 304). Preference given to BSc NU FS students.

D NU FS 478 Advanced Nutrition: Energy, Carbohydrates, Lipids, and Proteins

★3 (fi 6) (either term, 3-0-0). A lecture and reading course in carbohydrates, lipids, and proteins. Prerequisite: NUTR 301 (or 303). NUTR 302 (or 304) is recommended.

D NU FS 479 Advanced Nutrition: Vitamins and Inorganic Elements

★3 (fi 6) (second term, 3-0-0). A lecture and reading course in vitamins and inorganic elements. Prerequisite: NUTR 302 (or 304). NUTR 301 (or 303) is recommended.

S NU FS 480 Foodborne Pathogens

★3 (fi 6) (second term, 3-1s-0). Established and emerging causative agents of microbial foodborne illness, their significance and control in the food chain. Rationale for regulatory intervention to enhance the microbiological safety of foods. Offered in alternate years. Prerequisite: MICRB 265 or NU FS 361 or 363.

D NU FS 481 Advanced Foods

★3 (fi 6) (first term, 3-0-0). Quality characteristics of foods. Current scientific information about foods used in the home and institutions with emphasis on quality factors such as color, texture, and flavor. Prerequisites: NU FS 374 and ★3 in Biochemistry or consent of Instructor.

NU FS 502 Coordinated Practical Program

★3 (fi 6) (second term, 0-1s-8). Supervised practical experience in selected areas of interest. Note: For senior Foods and Nutrition majors.

211.171.2 Graduate Courses

Note: See also Agricultural, Food, and Nutritional Science listing for related courses.

S NU FS 554 Food Processing Project

★3 (fi 6) (either term, 1-0-5). Laboratory and pilot plant studies of selected food preservation techniques. Evaluation of effects of processing on food characteristics. Prerequisite: consent of Instructor.

S NU FS 566 Advanced Food Microbiology

★3 (fi 6) (second term, 3-1s-0). A lecture/discussion course on selected topics in food microbiology. Offered in alternate years. Prerequisite: MICRB 265 or NU FS 361 or 363.

S NU FS 573 Food Analysis

★1 (fi 2) (either term, 0-0-4). Classical and modern methods for the chemical analysis of foods and food ingredients. Prerequisite: consent of Instructor.

S NU FS 586 Food Process Evaluation

★3 (fi 6) (first term, 3-3s-0). In-depth study of optimization and cost analysis of selected food processes. Prerequisite: consent of Instructor.

S NU FS 587 Food Engineering Laboratory

★3 (fi 6) (either term, 1-0-3). Experiments in Food Engineering. Prerequisite: consent of Instructor.

S NU FS 588 Heat and Mass Transfer in Food Engineering

★3 (fi 6) (first term, 3-1s-0). Basic heat and mass transfer theories in solid and liquid foods. Application to selected unit operations. Prerequisite: consent of Instructor.

S NU FS 601 Topics in Food Science and Nutrition

★1 (fi 2) (alternate weeks, variable, 0-1s-0). Lecture, discussion, and graduate student seminar presentations of contemporary subjects. Introduction to public speaking and critical evaluation of current literature. A required course for all graduate students. Note: students will be required to present at least one seminar which will be graded.

S NU FS 650 Advances in Food Science and Nutrition

★3 (fi 6) (full session, 1-1s-0). A course that emphasizes current research developments in microbiology, chemistry, engineering, processing, and quality of food. Prerequisite: consent of Department.

211.172 Obstetrics and Gynaecology

Department of Obstetrics and Gynecology
Faculty of Medicine and Oral Health Sciences

OB GY 431 Obstetrics and Gynaecology

★3 (fi 6) (first term, 85 hours). An introduction to obstetrics and gynaecology, including some topics in human sexuality. For third year medical students only.

OB GY 446 Student Internship

★6 (fi 12) (full session, 8 weeks). Student internship for students in Phase III, MD program only.

211.173 Occupational Therapy

Department of Occupational Therapy
Faculty of Rehabilitation Medicine

Note: All OCCTH courses are open to OT students only except OCCTH 106 and 107 which are open to all students.

211.173.1 Undergraduate Courses

OCCTH 106 Communication Theory and Helping Relationship

★3 (fi 6) (either term, 3-0-0). Interpersonal communication theory and application to health care. Exploration of values and attitudes as they affect professional/client relationships.

OCCTH 107 Models, Approaches, and Service Delivery

★3 (fi 6) (either term, 3-0-0). Fundamental concepts of occupational therapy and their application in health care delivery. Implications of legal, educational, and governmental influences on service models.

OCCTH 209 Therapeutic Occupation

★3 (fi 6) (full session, 0-3L-0). Lectures in the therapeutic use of activity. Practical experience in selected activities suitable for use as therapeutic media, with emphasis on task analysis. Demonstrations of adaptive equipment and techniques. Corequisite: OCCTH 211. A single-term course taught over full session.

OCCTH 211 Assessment and Evaluation Techniques

★3 (fi 6) (full session, 0-3L-0). Theory and practical classes in evaluation, assessment, and treatment techniques. Corequisites: OCCTH 209, 333, 334, REHAB 282, 283. A single-term course taught over full session.

OCCTH 308 Psychosocial Assessment and Rehabilitation in Occupational Therapy

★6 (fi 12) (either term, 5-0-1). Introduction to the assessment of clinical

disorders in psychiatry and psychosocial issues. Taught from a lifespan approach through case studies, it links clinical disorders and psychosocial issues related to assessment and intervention with individuals in the practice of occupational therapy. Prerequisite: OCCTH 107.

OCCTH 312 Introduction to Assistive Technology

★3 (*fi 6*) (either term, 1-0-2). Discusses the role of the occupational therapist within a multidisciplinary service system. This includes an introduction to accessible architectural design, computer applications environmental controls, light/daily living technologies, and wheeled mobility equipment.

OCCTH 313 Orthotics

★3 (*fi 6*) (either term, 1-0-2). Lectures and practical classes in the principles of design and methods of fabrication of orthotic devices. Prerequisite: OCCTH 211.

OCCTH 328 Fieldwork

★3 (*fi 6*) (either term, 6 weeks). Credit. Practical experience in approved facilities and community agencies. Prerequisites: consent of Department and attendance at Orientation Program and Professional Development Seminar.

OCCTH 333 Medicine and Surgery

★3 (*fi 6*) (either term, 3-0-0). A series of lectures on common diseases and conditions encountered in the practice of occupational therapy, medical and surgical conditions, and their treatment. Prerequisites: REHAB 282, 283. Corequisite: OCCTH 211.

OCCTH 334 Orthopedics

★3 (*fi 6*) (either term, 4-0-0). A study of tissue biomechanics in normal and selected pathological conditions and the etiologies, medical and occupational therapy assessment and intervention of orthopedic disorders. Corequisites: OCCTH 211, 333, REHAB 282, 283.

OCCTH 335 Human Behavior in Illness and Disability

★3 (*fi 6*) (either term, 3-0-0). Orientation to psychosocial influence in health, illness and disability. Reactions to stress caused by physical trauma, hospitalization, and old age.

OCCTH 403 Occupational Therapy, Theory and Practice in Neurology

★3 (*fi 6*) (either term, 0-3L-0). Occupational Therapy principles, patient evaluation, and treatment procedures in a variety of neurological conditions. Prerequisite: REHAB 351. Corequisite: REHAB 353.

OCCTH 404 Group Dynamics and Community Leadership

★3 (*fi 6*) (either term, 0-3s-0). Principles of group therapy in rehabilitation as related to the practice of Occupational Therapy specifically aimed at social and community issues. Prerequisite: OCCTH 308.

OCCTH 407 Sexuality in Rehabilitation Workshop

★1 (*fi 2*) (either term, 20 hours) [Weekend workshop]. Sexuality as related to the practice of Occupational Therapy. Prerequisite: OCCTH 308. Corequisite: OCCTH 404.

OCCTH 408 Occupational Therapy Theory

★3 (*fi 6*) (either term, 0-3s-0). Selected conceptual models of occupational therapy are examined in terms of their philosophical base, conceptualization, and application to practice. Open only to post diploma degree completion students unless department consent is granted.

OCCTH 413 Special Fieldwork

★3 (*fi 6*) (either term, 0-3s-3c). A course designed to allow undergraduate students to pursue the practical application of occupational therapy techniques in a specialized setting. These settings depend on the student's stated objectives for pursuing an area of interest, as well as the consent of the agency where the fieldwork is to be done. Enrolment is limited. Prerequisite: consent of Department after completion of OCCTH 328. Note: May not be used for credit as an elective or to replace OCCTH 328, 428, 431, 432. This course is extra to the requirements for the BScOT degree.

OCCTH 425 Normal and Abnormal Child Function and Intervention

★6 (*fi 12*) (either term, 0-6L-0). The study of normal and abnormal physical, psychological, social, and intellectual development from birth to adolescence with emphasis on assessment and remedial programming in an occupational therapy context. Prerequisite: REHAB 351.

OCCTH 428 Fieldwork

★3 (*fi 6*) (either term, 7 weeks). Credit. Practical experience in approved facilities and community agencies. Prerequisites: consent of Department, attendance at Professional Development Seminar and completion of OCCTH 328.

OCCTH 431 Fieldwork

★4.5 (*fi 9*) (either term, 7 weeks). Credit. Practical experience in approved facilities and community agencies. Prerequisites: consent of Department and completion of OCCTH 428.

OCCTH 432 Fieldwork

★4.5 (*fi 9*) (either term, 7 weeks). Credit. Practical experience in approved facilities and community agencies. Prerequisites: consent of Department, completion of OCCTH 431 and completion of all course work.

OCCTH 435 Advanced Psychosocial Rehabilitation

★3 (*fi 6*) (either term, 1-2s-0). A review of psychosocial factors influencing occupational performance. Psychiatric and psychosocial disorders, their diagnosis, classification, and treatment, with specific emphasis on the role of the occupational therapist in assessment, intervention, and consultation. Particular emphasis on case management and counselling strategies as they apply to psychosocial rehabilitation. Prerequisite: OCCTH 308.

OCCTH 455 Administrative and Evaluation Issues in Rehabilitation

★3 (*fi 6*) (either term, 3-0-0). Interactive sessions concerning the current leadership practices and administrative strategies being utilized within the Canadian service delivery system. Students will acquire the knowledge and skills required to plan, develop, and evaluate occupational therapy services in a variety of settings. Prerequisite: consent of Department.

OCCTH 456 Occupational Therapy in Work

★3 (*fi 6*) (either term, 3-0L-0). Current developments and OT practice in physical rehabilitation, in particular work assessment and task analysis.

OCCTH 498 Special Seminars

★3 (*fi 6*) (either term, 0-3s-0). Content varies from year to year. Topics will be announced prior to registration period. Prerequisite: consent of Department.

OCCTH 499 Individual Study

★3 (*fi 6*) (either term, 0-3s-0). A course intended to allow the senior undergraduate student to pursue a topic of interest in more depth than the classroom structure permits. This may take the form of directed reading, laboratory or clinical experience. Prerequisite: Departmental consent.

211.173.2 Graduate Courses

Note: Open only to graduate students in Occupational Therapy program unless departmental consent is granted.

OCCTH 505 Instrumentation and Theory in Occupational Therapy

★3 (*fi 6*) (either term, 0-3s-0). Measurement principles and their application to occupational therapy. Overview of measurement techniques used by therapists. Prerequisite or corequisite: EDPY 501 or equivalent.

OCCTH 521 Program Evaluation in Occupational Therapy

★3 (*fi 6*) (either term, 0-3s-0). Designed to equip the student with the resources and skills to evaluate occupational therapy program delivery.

OCCTH 535 Psychosocial Aspects of Rehabilitation

★3 (*fi 6*) (either term, 0-3s-0). Discussion of psychological factors affecting physical and psychiatric rehabilitation, and implications for program planning. Prerequisite: OCCTH 532 or consent of Department.

OCCTH 538 Counselling in Rehabilitation

★3 (*fi 6*) (either term, 0-3s-0). Discussions on specific issues related to counselling handicapped persons. Opportunity to practice and apply communication and counselling skills. Prerequisite: OCCTH 532 or consent of Department.

OCCTH 570 Evaluation of Occupational Performance

★3 (*fi 6*) (either term, 0-3s-3). Presentation of resources and techniques necessary for work evaluation, work adjustment and work samples used in rehabilitation.

OCCTH 596 Project Design

★3 (*fi 6*) (Intersession, 0-1s-2). Preparation of directed research project. Open to students in the course-based Master's route only.

OCCTH 597 Research and Directed Studies

★3 (*fi 6*) (either term, 0-0-3). Work on a specific project under the supervision of a faculty member. Prior approval of the supervisor and the student's advisor required.

OCCTH 598 Special Seminars

★3 (*fi 6*) (either term, 0-3s-0). Content varies from year to year. Topics will be announced prior to registration period. Prerequisite: consent of Department. May be repeated.

OCCTH 599 Directed Study

★3 (*fi 6*) (either term, 0-3s-0). Designed to allow a student to pursue a topic of interest in more depth than permitted by existing courses. Prerequisite: Departmental approval of plan of study. May be repeated.

OCCTH 900 Directed Research Project

★6 (*fi 12*) (variable).

211.174 Oncology

Department of Oncology
Faculty of Medicine Oral Health Sciences

211.174.1 Undergraduate Courses**ONCOL 431 Topics in Oncology**

★1 (*fi 2*) (full session, 24 hours). For third-year medical students only.

211.174.2 Graduate Courses

Note: See also PMCOL 505 (Cancer Chemotherapy), MED 573 (Directed Reading in Experimental Hematology), PHYS 475 (Medical Radiation Physics—Fundamentals) and PHYS 477 (Medical Radiation Physics—Radiotherapy Applications).

ONCOL 501 The Principles of Palliative Care

★3 (*fi 6*) (second term, 3-0-0). An introduction to the principles of palliative care. Topics to be addressed include the spectrum of terminal illness, hospice care versus palliative care, ethical and philosophical aspects of palliative care, the epidemiology, physical aspects and emotional mechanisms (coping) associated with terminal illness, the dichotomy between palliative care and euthanasia or assisted suicide, the spiritual, cultural, social, legal, and financial aspects of death and dying, the impact of differing health care systems on the delivery of palliative care with examples drawn from Canada, North America, Europe, and developing countries, multi-disciplinary approaches to palliative care, and the roles of the patient, family and other care-givers in palliative care. Prerequisite: consent of Department.

ONCOL 510 Issues in Psychosocial Oncology

★3 (*fi 6*) (first term, 3-0-0). The general objective of the course is to explore specific clinical and research issues in psychosocial oncology. The course is primarily designed to fit into masters and doctoral programs in a range of disciplines including psychology, educational psychology, social work, family studies, nursing, and pastoral care. It is also open to students in other disciplines who are considering a career in oncology. Issues in psychosocial oncology such as the "mind-body connection," children with cancer, cancer and its impact on the family, grief and loss issues, and many other related topics will be explored. Course assignments will allow students from different disciplines to investigate their own areas of particular interest. Prerequisite: consent of Department.

ONCOL 520 Tumor Biology

★3 (*fi 6*) (second term, 3-0-0). The course will provide an introduction to the basic science of oncology. Topics to be covered comprise: the genetic basis of cancer, including the role of proto-oncogenes and tumor suppressor genes; mechanisms of carcinogenesis and radiation-sensitivity, including DNA repair and cell cycle control; the molecular basis of tumor metastasis, including cell motility, tumor cell invasion, and extravasation; and a brief overview of therapeutic stratagems. Course offered in alternate years. Prerequisites: BIOCH 203 and 205 or equivalent.

ONCOL 530 Cellular Responses to DNA-damaging Agents

★3 (*fi 6*) (second term, 3-0-0). A lecture course that will provide an introduction to the current concepts of cellular responses to DNA-damaging agents, both naturally occurring and human-made. This course will provide an overview of the types of DNA damage that are induced by various physical and chemical carcinogens, and the signal transduction pathways activated in response to DNA damage. Topics to be covered include cell cycle arrest, DNA repair, and apoptosis. An overview of how this knowledge can be applied for improved radio- and chemotherapeutic management of cancer patients will be presented. Note: Course offered in alternate years. Prerequisites: BIOCH 203 and 205 or equivalent

ONCOL 535 Clinical Radiobiology

★1.5 (*fi 3*) (second term, 1.5-0-0). An introduction to the physics, chemistry, and biology of radiation effects on cells and tissues. Concepts discussed are focused on those of relevance to the treatment of cancer with ionizing radiation. Prerequisite: consent of Department.

ONCOL 570 Directed Reading in Experimental Oncology

★3 (*fi 6*) (either term, 0-3s-0). Reading and discussion of current research literature on selected topics in experimental oncology under the direction of one or more faculty members. Topics presently available include cell adhesion mechanisms, cell cycle regulation, DNA repair, radiotherapy susceptibility and resistance, oncogenes/tumor suppressor genes, and tumor cell metastasis. Notes: (1) Grades will be based on participation in group discussions and/or written reports from assigned readings with emphasis on critical evaluation of the subject matter. (2) Students in other graduate programs may register with the consent of Instructors. Prerequisite: consent of Department.

ONCOL 660 Current Topics in Cancer Research

★2 (*fi 4*) (full session, 0-1s-0). A general seminar course on recent advances in a wide range of topics related to cancer development and management. Selected topics include experimental therapeutics, molecular oncogenetics, tumour immunobiology, DNA repair, and cell cycle regulation. Notes: (1) Active participation is required of all graduate students in the Division of Experimental Oncology with a view toward developing their critical appraisal abilities. (2) Students will present one seminar each year either on results of their own research or on a related topic approved by their research advisor.

211.175 Ophthalmology

Department of Ophthalmology
Faculty of Medicine and Oral Health Sciences

OPHTH 421 An Introduction to Ophthalmology

★2 (*fi 4*) (either term, 24 hours). For Phase II Medical students only.

OPHTH 600 Seminar In Ophthalmology

★0 (*fi 6*) (full session, 0-3s-0). Open to graduate students, particularly those in the Medical Sciences (Ophthalmology) program. Seminars are given by Residents in the Postgraduate Medical Education program in Ophthalmology. Tutorials are presented by staff or by visiting speakers. Topics covered include paediatric ophthalmology/strabismus, contact lens/cornea/external eye disease, neuro-ophthalmology, orbit/oculoplastics, retina, principles of ocular surgery, glaucoma, ocular genetics. Specific topics will not be repeated more often than once each three years so that three consecutive enrolments are possible. Prerequisite: consent of Department.

211.176 Oral Biology

Department of Oral Health Sciences
Faculty of Medicine and Oral Health Sciences

211.176.1 Undergraduate Courses**OBIOL 202 Oral Biology I**

★4 (*fi 8*) (full session, 60 hours). Basic microscopic anatomy pertinent to the main body systems and a more detailed treatment of the structure and development of oral tissues, with special reference to the teeth and their supporting structures.

OBIOL 300 Introduction to Pharmacology

★2 (*fi 4*) (full session, 28 hours). Lectures are used to illustrate the principles of pharmacology including rational application of commonly used drugs to the treatment of disease. This course is available only to students registered in the Dental Hygiene Diploma program.

OBIOL 302 Oral Biology II

★3 (*fi 6*) (first term 45 hours). A multidisciplinary course that examines the unique physiology, biochemistry and nutrition of oral structures. Topics will include functions of the periodontal tissues, the temporomandibular joint, mastication, deglutition, speech, special reflexes involving cranial nerves, receptors of the stomatognathic system, and salivary glands and relevance of saliva to caries. Oral manifestations of metabolic disease, the physiology of pain, and the role of nutrition in the development of oral tissues and the maintenance of oral health will also be discussed.

OBIOL 303 Oral Biology I

★4 (*fi 8*) (second term, 60 hours). Development, histology, and comparative anatomy of the craniofacial complex and dental tissues.

OBIOL 305 Pathology

★3 (*fi 6*) (first term, 42 hours). Introduction to the principles of pathology with consideration of the more common diseases affecting the human body. Visual differentiation between normal and abnormal tissues; the physiological and pathological changes which affect the teeth, their supporting structures and the oral mucosa, including oral manifestations of selected systemic disturbances.

OBIOL 353 Oral Biology II

★4 (*fi 8*) (full session, 60 hours). A multidisciplinary course that examines the unique physiology, biochemistry and nutrition of oral structures. Topics will include functions of the periodontal tissues, the temporomandibular joint, mastication, deglutition, speech, special reflexes involving cranial nerves, receptors of the stomatognathic system, and salivary glands and the relevance of saliva to caries. Oral manifestations of metabolic disease, the physiology of pain, and the role of nutrition in the development of oral tissues and the maintenance of oral health will also be discussed.

OBIOL 355 Oral Pathology

★4 (*fi 8*) (second term, 60 hours). The diagnosis, pathology and treatment of common diseases of the teeth and adjacent structures.

OBIOL 357 Pharmacology

★5 (*fi 10*) (full session, 75 hours). An introduction to the principles of pharmacology including mechanisms of drug action; pharmacokinetics and drug metabolism; and mechanisms of drug interactions and adverse drug reactions. These principles will be applied to groups of drugs acting on various organ systems of the body, representative drugs being selected whenever possible for their physiological and clinical significance to the practice of dentistry. Particular emphasis will be placed on anaesthetics, antacids, autonomic drugs and drugs with selective toxicity employed in infections and malignancies.

OBIOL 454 Dental Therapeutics

★1 (*fi 2*) (either term, 15 hours). Lectures will be presented on the following topics: pharmacology and therapeutics, prescription writing, drug schedules and interactions, cardiovascular, geriatric, hemostasis and nutritional considerations, desensitizing agents, sterilization and disinfection, and other agents used in practice.

OBIOL 456 Correlated Science Seminars

★1 (*fi 2*) (second term, 15 hours). Seminars will include prophylaxis, gingivitis, periodontitis, local anaesthesia, endodontics, orthodontics, extractions, TMJ, operative dentistry, removable prosthodontics and fixed prosthodontics.

OBIOL 497 Independent Study

★3 (*fi 6*) (full session, 55 hours). An advanced independent study program defined by the student with the parameters of Faculty approved guidelines. The purpose of the course is to encourage the student to develop an interest in and appreciation for research, to gain skills in supporting opinions and observations by use of the scientific method and to present the results of the study to colleagues and to the public.

211.176.2 Graduate Courses

OBIOL 500 Oral Biology I

★3 (*fi 6*) (first term, 3-0-0). Functional anatomy of head and neck. Development, structure, function and biochemistry of connective tissues associated with the jaws. (For graduate students in Orthodontics.)

OBIOL 501 Oral Biology II

★3 (*fi 6*) (second term, 3-0-0). A continuation of Oral Biology I. Growth and development of skull. Anthropology. Selected topics in physiology.

OBIOL 503 Advanced Oral Pathology

★3 (*fi 6*) (first term, 3-0-0). A review of diseases that affect the oral tissues and an exploration of recently acquired knowledge pertaining to them.

OBIOL 504 Oral Medicine

★3 (*fi 6*) (second term, 3-0-0). A study of the mechanisms of oral disease as a basis for rationale of treatment.

OBIOL 601 Seminars in Oral Biology

★2 (*fi 4*) (full session, 0-1s-0). Seminars will include the major areas of research in the Department of Oral Biology. Students will present one seminar.

OBIOL 607 Conference Seminars in Oral Biology I

★3 (*fi 6*) (first term, 0-3s-0). This course will include seminars and conferences on selected aspects of oral biology. Continuous evaluation of student preparation and participation throughout the course will be used for assessment. This is an optional course open to students outside the Faculty of Dentistry by consent of the Chair, Department of Oral Biology.

OBIOL 608 Conference Seminars in Oral Biology II

★3 (*fi 6*) (second term, 0-3s-0). This is a continuation of DENT 607.

OBIOL 609 Connective Tissue Research

★2 (*fi 4*) (full session, 0-1s-0). This course will critically survey recent research on connective tissues and will aim to provide students practice in communicating research data.

OBIOL 900 Directed Research Project

★6 (*fi 12*) (variable).

211.177 Organizational Analysis

Department of Organizational Analysis
Faculty of Business

Note: Enrolment in all ORG A courses is restricted to students registered in the Faculty of Business, or to students registered in specified programs that require Business courses to meet degree requirements and who have obtained prior approval of their Faculty.

The following table lists courses renumbered effective 1997/98:

Old	New	Old	New
BUS 424	ORG A 431	ORG T 404	ORG A 403
HRM 301	ORG A 311	ORG T 405	ORG A 404
HRM 402	ORG A 412	ORG T 412	ORG A 429
HRM 403	ORG A 413	ORG T 413	ORG A 407
HRM 422	ORG A 414	ORG T 414	ORG A 433
HRM 423	ORG A 415	ORG T 415	ORG A 436
HRM 443	ORG A 417	ORG T 421	ORG A 434
HRM 496	ORG A 418	ORG T 432	ORG A 405
ORG T 301	ORG A 301	ORG T 444	ORG A 435
ORG T 311	ORG A 321	ORG T 492	ORG A 432
ORG T 402	ORG A 409	ORG T 495	ORG A 495
ORG T 403	ORG A 402		

211.177.1 Undergraduate Courses

ORG A 201 Introduction to Management

★3 (*fi 6*) (either term, 3-0-0). Introduces students to the behavioral, political and organizational dynamics of managerial practice. Reviews how managers make decisions on corporate and competitive strategy. Topics include power, decision making, motivation, leadership, and team management.

ORG A 301 Behavior in Organizations

★3 (*fi 6*) (either term, 3-0-0). Provides an understanding of the behavior of individuals in organizations. Draws from psychology, sociology, organization theory and covers topics such as personality, motivation, leadership, communication, conflict, and group dynamics. Prerequisite: Open to second-, third- and fourth-year students.

ORG A 311 HRM: Managing the Work Force in Canada

★3 (*fi 6*) (either term, 3-0-0). This course is a general overview of human resource management issues in organizations. It focuses on reward systems, the design of work, legal issues, union-management relationships, staffing, and training and development. Prerequisite: Open to third- and fourth-year students.

ORG A 321 Introduction to Strategic Management and Organization Design

★3 (*fi 6*) (either term, 3-0-0). Explores why organizations such as McDonalds, Northern Telecom, Benetton, Wal-Mart and the University of Alberta use different patterns of organization. Examines the political and behavioral dynamics of management decision making. Prerequisite: Open to second-, third- and fourth-year students.

ORG A 402 Leadership Skills

★3 (*fi 6*) (either term, 3-0-0). The purpose of this course is to increase understanding of leadership roles and skill in exercising those roles. These include team building, mentoring, managing conflict, delegating, managing participative decision making, creative problem solving, and time and stress management. Prerequisite: Open to third- and fourth-year students.

ORG A 403 Organizational Leadership Concepts

★3 (*fi 6*) (either term, 3-0-0). This is a seminar course in applied behavioral science that emphasizes the indepth analysis of leadership. The purpose of the course is to increase our effectiveness and skill in understanding leadership in organizations, analyzing leadership and to become better leaders in organizations. To accomplish this objective, we will use leadership theories and concepts as tools to understand the leadership and leadership thinking of great leaders/leadership thinkers form the past. Some representative examples from history are Sun Tzu, Machiavelli, Winston Churchill, Mahatma Gandhi, Themistocles, Aristotle and Cleopatra. Classes will be a mix of small group and large group discussion, lecture, and student group discussion.

ORG A 404 Interpersonal Communication and Team Management

★3 (*fi 6*) (either term, 3-0-0). This course provides an understanding of interpersonal (or face-to-face) communication process and presents opportunities for personal skill development. Students should expect to engage in role play and to receive feedback on their personal style of communication. Topics include team communication, supervisory-subordinate relationships, influence and persuasion, conflict management, and performance appraisal. Prerequisite: Open to third- and fourth-year students.

ORG A 405 Gender Issues in Organizations

★3 (*fi 6*) (either term, 3-0-0). This course examines the ways in which gender, personal characteristics and organizational practices interact in influencing women's and men's experiences in work settings. Among the issues discussed are gender differences in career motivation and commitment, leadership skills and ability, and conflicts between professional and personal responsibilities. Prerequisite: Open to third- and fourth-year students.

ORG A 406 Ethical Issues in Business

★3 (*fi 6*) (either term, 3-0-0). This course assists students in developing and refining their personal ethical frameworks by examining issues commonly facing members of business and government organizations. A wide range of issues will be explored including discrimination, product and worker safety, environmental impacts, insider trading, and employee privacy and rights. Prerequisite: Open to third- and fourth-year students.

ORG A 409 Advanced Seminar: Behavior in Organizations

★3 (*fi 6*) (either term, 3-0-0). Individual instructors will cover topics in the field of organization behavior that relate to their particular research interests. Prerequisite: ORG A 301.

ORG A 412 Effective Negotiations

★3 (*fi 6*) (either term, 3-0-0). This is a comprehensive study of negotiation theory and practice. A negotiation simulation is conducted to provide an understanding of how theory translates into practice. Prerequisite: Open to third- and fourth-year students.

ORG A 413 Rights in the Work Place

★3 (*fi 6*) (either term, 3-0-0). This is a comprehensive study of rights in the work place. It examines principles of human resource management as guided by statutes and case law by courts and administrative tribunals. Prerequisite: Open to third- and fourth-year students.

ORG A 414 Work Force Planning

★3 (*fi 6*) (either term, 3-0-0). This Human Resource Management course examines how a company interacts with the labor market to ensure that it has the right number and skill mix of employees. Part of the course involves a field research project in which students critique the work force plan of a local company. Prerequisite: Open to third- and fourth-year students.

ORG A 415 Staffing

★3 (*fi 6*) (either term, 3-0-0). This Human Resource Management course is focused on the philosophy and procedures used in obtaining and maintaining an efficient work force. Topics include recruitment, selection and training. Prerequisite: Open to third- and fourth-year students.

ORG A 416 Performance Management and Rewards

★3 (*fi 6*) (either term, 3-0-0). This Human Resource Management course focuses on how organizations create and operate a performance management system. It presents an overview of current issues in the field, such as performance evaluation, compensation planning, internal consistency, external competitiveness, individual equity, and benefits. Prerequisite: Open to third- and fourth-year students.

ORG A 417 Managing the Work Force—International Perspectives

★3 (*fi 6*) (either term, 3-0-0). This course comparatively explores different techniques of human resource management (HRM) used in Canada, the USA, Japan, Sweden, Germany, and France. Prerequisite: Open to third- and fourth-year students.

ORG A 418 Public Sector Employee Relations

★3 (*fi 6*) (either term, 3-0-0). This Human Resource Management course examines public sector employee relations in the context of governments, public service commissions, trade unions, and administrative tribunals. It highlights public sector/private sector differences and includes a simulation of public sector labor contract negotiations. Prerequisite: Open to third- and fourth-year students.

ORG A 419 Human Resource Management for Entrepreneurial Firms

★3 (*fi 6*) (either term, 3-0-0). This course takes the view that employees are a company's internal customer. As such, effective employee relations in an entrepreneurial firm or a family-owned business are as important to sustaining growth and profitability as customer relations. Topics include mission statements, human resource planning, creative staffing strategies, board composition, creating a safe workplace, excess staff, employment law, reward strategies, and training. Prerequisite: Open to third- and fourth-year students.

ORG A 422 Critical Review of Management Thought

★3 (*fi 6*) (either term, 3-0-0). This course reviews the thinking of management theorists from classical management onward, examining the context of their ideas and, where relevant, how these have been taken up and adapted. Contemporary issues and ideas in management would also be examined in a critical fashion.

ORG A 429 Advanced Seminar: Organization Theory

★3 (*fi 6*) (either term, 3-0-0). Individual instructors will cover topics in the field of organization theory that relate to their particular research interests. Prerequisite: ORG A 201 or ORG A 321.

ORG A 431 New Venture Creation and Organization

★3 (*fi 6*) (either term, 3-0-0). This course explores how small businesses are created and operated. Topics include the entrepreneurial process, opportunity recognition, business planning, mobilizing resources and organization creation. Prerequisite: FIN 301.

ORG A 432 Managing for Quality

★3 (*fi 6*) (either term, 3-0-0). This course examines what quality management is, how it is used to improve performance, and how an organization can transform itself to a quality management orientation. In addition the history of management thought related to quality management including that of prominent figures such as Taylor, Deming, and Juvan is explored. Prerequisite: Open to third- and fourth-year students.

ORG A 433 Managing Organizational Change

★3 (*fi 6*) (either term, 3-0-0). This course examines organization change, e.g. how organizations make transitions from one state to another. There is also a focus on understanding how management goes about changing corporate culture, organization structure and management systems. Prerequisite: Open to third- and fourth-year students.

ORG A 434 Managing Professional Service Firms

★3 (*fi 6*) (either term, 3-0-0). The course examines the managerial practices of professional service firms, with particular reference to accounting, law, engineering, and management consultancy firms. The course explores the distinctive tasks and governance structures of professional service firms and how these influence the strategic and functional (e.g. marketing, human resource management, quality control) areas of management behavior. Particular attention is given to the problem of innovation and creativity of management practice. Prerequisite: Open to third- and fourth-year students.

ORG A 435 Managing International Business

★3 (*fi 6*) (either term, 3-0-0). This course explores issues related to managing businesses that operate in an international content. Prerequisite: Open to third- and fourth-year students.

ORG A 436 Management and the Natural Environment

★3 (*fi 6*) (either term, 3-0-0). This course is an introduction to global environment issues and their impact on managers and organizations. It explores the key issues of the day including atmospheric issues, biodiversity, hazardous waste, and energy consumption. It also explores solution spaces including the concept of sustainable development, economic instruments, regulatory systems, full cost accounting, and international governance. Prerequisite: Open to third- and fourth-year students.

ORG A 437 Managing Culture

★3 (*fi 6*) (either term, 3-0-0). This course has two aims: 1) to explore how organizational and work group cultures affect the management of an organization; and 2) to explore how national culture impacts management practice and 'doing business' in foreign settings. Prerequisite: Open to third- and fourth-year students.

ORG A 441 Business Strategy

★3 (*fi 6*) (either term, 1.5-1.5s-0). This course examines top management decisions and emphasizes the development of business and corporate strategy. It integrates the management principles studied in the business core using a series of business cases. Guest Faculty members and executives will participate. Prerequisites: FIN 301; MARK 301; and ORG A 201.

ORG A 488 Selected Topics in Organization Theory

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: Consent of Department.

ORG A 495 Individual Research Projects

★3 (*fi 6*) (either term, 3-0-0). Special study for undergraduate students under the direction of a particular instructor. Prerequisites: consent of Instructor and Associate Director Undergraduate Program. (When a student registers in this course for a second or third time, subsequent higher course numbers are to be used: ORG A 496, 497).

211.177.2 Graduate Courses**ORG A 501 Organization Strategy**

★1.5 (*fi 3*) (either term, 18 hours). The first part of this course examines the formation of business strategy. It recognizes the complexities and messiness of strategy formation and explores how organizations actually develop strategies. The second part examines the evolution, determinants, and relevance of alternative ways of organizing. Contemporary ideas (e.g. reengineering, the "learning" organization, virtual organizations) are critically reviewed. Offered in a six-week period.

ORG A 503 Strategic Human Resource Management

★1.5 (*fi 3*) (either term, 18 hours). This Human Resource Management course looks at options relevant to staffing, performance management, reward systems, and labor relations in relation to organizational strategy. It addresses current issues such as workforce diversity, worker empowerment, incentive schemes, and labor-management partnerships. Offered in a six-week period.

ORG A 504 Elements of Organizations

★1.5 (*fi 3*) (either term, 18 hours). This course examines research on human behavior in organizations as it applies to individual motivation and to organizational effectiveness. It provides a framework for senior executives and supervisors alike for designing and implementing an

organization's human resource management systems. Topics include job design, team management, delegation, decision making, goal setting, performance measurement, performance appraisal, communication, and conflict management. Offered in a six-week period.

ORG A 543 Business Ethics

★1.5 (*fi 3*) (either term, 18 hours). This course will address ethical aspects of business situations and relationships. It will be emphasized that virtually all business decisions have significant ethical content.

ORG A 611 Current Issues in Human Resource Management

★3 (*fi 6*) (either term, 3-0-0). This course is relevant to managers who want to learn about current critical issues and the questions with which they will have to deal in designing HRM systems in the 1990s and beyond.

ORG A 612 Effective Negotiations

★3 (*fi 6*) (either term, 3-0-0). This Human Resource Management course is a comprehensive study of negotiation theory and practice. A negotiation simulation is conducted to provide an understanding of how theory translates into practice.

ORG A 616 Performance Management and Rewards

★3 (*fi 6*) (either term, 3-0-0). This Human Resource Management course focuses on how organizations design and manage a performance management system. It presents an overview of current issues in the field, such as performance evaluation, compensation planning, internal consistency, external competitiveness, individual equity and benefits.

ORG A 617 Managing the Work Force: International Perspectives

★3 (*fi 6*) (either term, 3-0-0). This Human Resource Management course comparatively explores different systems of human resources management (HRM) that are used in Canada, the USA, Japan, Sweden, Germany, and France, and their implications for firm competitiveness. Throughout the course, the North American experience serves as the backdrop or frame of reference for analytical discussions.

ORG A 618 Public Sector Employee Relations

★3 (*fi 6*) (either term, 3-0-0). This Human Resource Management course examines the role and functions in public sector employee relations of governments, public service commissions, trade unions, and administrative tribunals. It highlights public sector/private sector differences and includes a simulation of public sector labor contract negotiations.

ORG A 619 Power and Organization

★3 (*fi 6*) (either term, 3-0-0). This course introduces students to aspects of organizational life often omitted in business courses—the roles of humor, gossip, emotion and sex; the organization of time and space; the construction of the body and organizational identities—and considers their significance for understanding contemporary organizational practices.

ORG A 624 Critical Review of Management Ideas

★3 (*fi 6*) (either term, 3-0-0) Reviews the evolution of management thought. Particular attention is given to examination of contemporary ideas such as reengineering, virtual organizations and total quality management. Examines how these ideas affect managerial practice and the extent to which there is substance behind the rhetoric.

ORG A 631 New Venture Creation and Organization

★3 (*fi 6*) (either term, 3-0-0). This course concentrates on the development of a new enterprise and the management of an existing small business. Casework and projects enable students to assess the opportunities, risks, and capabilities necessary for entrepreneurial success. The course emphasizes managerial and strategic problems during the early years of business formation and growth, including business planning. The course emphasizes the interface between theory and practice.

ORG A 632 Managing for Quality

★3 (*fi 6*) (either term, 3-0-0). This course examines what quality management is, how it is used to improve performance, and how an organization can transform itself to a quality management orientation. In addition, the history of management thought related to quality management including that of prominent figures such as Taylor, Deming, and Juran is explored.

ORG A 633 Managing Organizational Change

★3 (*fi 6*) (either term, 3-0-0). This course examines organization change, e.g. how organizations make transitions from one state to another. There is also a focus on understanding how management goes about changing corporate culture, organization structure and management systems.

ORG A 634 Managing Professional Service Firms

★3 (*fi 6*) (either term, 3-0-0). The course examines the managerial practices of professional service firms, with particular reference to accounting, law, engineering, and management consultancy firms. The course explores the distinctive tasks and governance structures of professional service firms and how these influence the strategic and functional (e.g. marketing; human resource management; quality control) areas of management behavior. Particular attention is given to the problem of innovation and creativity of management practice.

ORG A 635 Managing International Business

★3 (*fi 6*) (either term, 3-0-0). This course examines selected topics in managing an international business. It provides an overview of the primary issues. Additional selected topics will be chosen in consultation with the students.

ORG A 636 Management and the Natural Environment

★3 (*fi 6*) (either term, 3-0-0). This course is an introduction to the global environment crisis and its impact on managers and organizations. It explores the key issues of the day, including atmospheric issues, biodiversity, hazardous waste, and energy consumption. It also explores solution spaces including the concept of sustainable development, economic instruments, regulatory systems, full cost accounting, and international governance.

ORG A 637 Managing Culture

★3 (*fi 6*) (either term, 3-0-0). This course has two aims: 1) to explore how organizational and work group cultures affect the management of an organization; and 2) to explore how national culture impacts management practice and 'doing business' in foreign settings.

ORG A 638 Strategic Management of Technology and Innovation

★3 (*fi 6*) (either term, 3-0-0). This advanced course helps the student to understand the management of new product or production process development and change in existing products or processes in firms and industries. Major issues discussed are: 1) competitiveness and technology assessment in managing the introduction of new product or process technology; 2) diffusion of innovations among firms and the technological evolution of industries; and 3) strategies of how to manage technological innovation within the firm.

ORG A 639 The Process of Making Public Policy

★3 (*fi 6*) (either term, 3-0-0). Emphasizes a systematic and comprehensive approach to the study of developing and implementing public policy within the context of Canadian society. This course explores both the decision-making process, and such factors as the separation of powers between levels of government, electoral politics, interest groups, media and government bureaucracy as they influence the making of public policy.

ORG A 641 Business Strategy

★3 (*fi 6*) (either term, 3-0-0). This course examines top management decisions and emphasizes the development of business and corporate strategy. It integrates the management principles studied in the business core using a series of business cases. Guest Faculty members and executives will participate. Prerequisite: All required Year one MBA core courses.

ORG A 642 Business Policy

★3 (*fi 6*) (either term, 3-0-0). This course is concerned with the social, economic, political and cultural environment in which businesses operate in Canada. It centres on the major projects and set of interrelationships among business, government, other groups, and the Canadian public. Topics will vary from year to year.

ORG A 643 Managing Public, Not-for-Profit and Voluntary Organizations

★3 (*fi 6*) (either term, 3-0-0). This course will examine the context and nature of managerial behavior and activity in the non-profit, especially government, sector. The focus will be on the implementation rather than the formation of policies and programs. Public and private sector managerial practices will be compared.

ORG A 652 Leadership Skills

★3 (*fi 6*) (either term, 3-0-0). The purpose of this course is to increase the student's understanding of leadership roles and skill in exercising those roles. These include team building, mentoring, managing conflict, delegating, managing participative decision making, creative problem solving, and time and stress management.

ORG A 653 Leadership Concepts in Organizational Settings

★3 (*fi 6*) (either term, 3-0-0). This seminar provides an in-depth understanding of issues and practices related to leadership in organizations. Classes will be a mix of small group discussion, group activities, large group discussion, and lecture.

ORG A 654 Research Methods in Organization Science

★3 (*fi 6*) (either term, 3-0-0) This course is concerned with the nature and process of research in the organization sciences. It is designed for the student who wishes to know more about how research is done and about the meaning of research findings in organization science. This course should be of special interest to students who are contemplating a career in teaching and research. Topics covered include: role and development of theory in research; steps and problems in the design of a research project; problems of measurement; appropriate methods of data analysis; and interpretation of results. The emphasis is on the logic of the research process rather than the mechanics of specific procedures, on survey research and field methods rather than laboratory research. Not open to students who have completed BUS 654.

ORG A 655 Gender Issues in Organizations

★3 (*fi 6*) (either term, 3-0-0). This course examines the ways in which gender, personal characteristics and organizational practices interact in influencing women's and men's experiences in work settings. Among the issues discussed are gender differences in career motivation and commitment, leadership skills and ability, and conflicts between professional and personal responsibilities.

ORG A 656 Ethical Issues in Business

★3 (*fi 6*) (either term, 3-0-0). This course assists students in developing and refining their personal ethical frameworks by examining issues commonly facing members of business and government organizations. A wide range of issues will be explored including discrimination, product and worker safety, environmental impacts, insider trading, and employee privacy and rights.

ORG A 657 Interpersonal Communication and Team Management

★3 (*fi 6*) (either term, 3-0-0). This course provides the understanding of interpersonal (or face-to-face) communication process and presents opportunities for personal skill development. Students should expect to engage in role plays and to receive feedback on their personal style of communication. Topics include team communication supervisory-subordinate relationships, influence and persuasion, conflict management, and performance appraisal.

ORG A 670 Internal Corporate Venturing

★3 (*fi 6*) (Intersession, 3-0-0). Open to MBA/MPM students and students registered in graduate programs in Engineering. Prerequisites: Completion of first year of program and consent of Instructor and MBA/MPM Office.

ORG A 672 New Ventures Management

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: Completion of the first year of the MBA or MPM program.

ORG A 686 Selected Topics in Behavioral Sciences

★3 (*fi 6*) (either term, 3-0-0).

ORG A 701 Seminar in Organization Theory

★3 (*fi 6*) (either term, 3-0-0).

ORG A 702 Seminar in Human Behavior in Organization

★3 (*fi 6*) (either term, 3-0-0).

ORG A 703 Seminar in Strategic Management

★3 (*fi 6*) (either term, 3-0-0).

ORG A 704 Individual Research

★3 (*fi 6*) (either term, 3-0-0).

ORG A 705 Seminar in Contemporary Issues

★3 (*fi 6*) (full session, 3-0-0).

ORG A 810 The Manager as Strategist

★1.5 (*fi 16*) (first term, 18 hours). A week-long intensive course. Identifying and developing the human resources, leadership, and strategy skills essential for today's successful executive. Restricted to Executive MBA students only.

ORG A 820 Managing Human Resources

★3 (*fi 32*) (first term, 3-0-0). Understanding interpersonal behavior within organizations; assessing and developing interpersonal effectiveness both as a leader and a team member. Restricted to Executive MBA students only.

ORG A 860 Management of Technology/Innovation

★3 (*fi 32*) (first term, 3-0-0). Understanding basic science and technology; integrating new technology into operations; managing research and development. Restricted to Executive MBA students only.

ORG A 870 Corporate Strategy

★3 (*fi 32*) (second term, 3-0-0). Understanding corporate strategy and processes to mobilize resources to achieve corporate objectives; industry and competitive analysis. Restricted to Executive MBA students only.

ORG A 875 Leadership

★3 (*fi 32*) (second term, 3-0-0). Understanding the unique perspectives, tasks, and responsibilities of the executive in providing leadership to the organization; dynamic processes of organizations; and developing leadership skills. Restricted to Executive MBA students only.

211.178 Paediatrics

Department of Paediatrics
Faculty of Medicine and Oral Health Sciences

PAED 421 Introduction to Paediatrics

★2 (*fi 4*) (full session, 36 hours). This course forms an introduction to the science and art of paediatrics. The subject will be taught from a problem-oriented approach empathizing the uniqueness of the child. For second-year medical students.

PAED 431 Topics in Medical Genetics

★1 (*fi 2*) (full session, 22 hours). For third-year medical students only.

PAED 446 Student Internship

★6 (*fi 12*) (full session, 8 weeks). Student internship for students in Phase III only.

PAED 501 Pathophysiology of Newborn Diseases

★4 (*fi 8*) (either term, 78 hours). Basic and clinical lectures on basic pulmonary physiology, respiratory diseases of newborns, assisted ventilation, jaundice, birth asphyxia, cardiac problems, thermal control, fluid and electrolyte balance, resuscitation of newborn, hematologic problems, sepsis, drug use and surgical problems in the newborn. Prerequisites: PAED 446, NURS 453, or consent of Department.

211.179 Paleontology

Departments of Biological Sciences and Earth and
Atmospheric Sciences
Faculty of Science

The following table lists renumbered courses effective 1997/98:

New	Old
PALEO 314	PALEO 414

Note: Certain courses will normally be offered in alternate years when indicated by the symbol "†." If sufficient demand exists, however, exceptions may be made and courses offered in off-cycle years. Students should contact the Student Services section of the Department office.

211.179.1 Undergraduate Courses**PALEO 318 Paleobiology of the Lower Vertebrates**

★3 (*fi 6*) (first term, 3-0-3). Evolution of fish-like vertebrates, amphibians, reptiles and birds, with emphasis on systematics, major adaptive shifts and subsequent evolutionary radiation. Prerequisite: EAS 230 or ZOOL 225 or ZOOL 200.

PALEO 319 Paleobiology of the Higher Vertebrates

★3 (*fi 6*) (second term, 3-0-3). The Mesozoic history of mammals as illustrative of the origin and evolution of a higher taxon; adaptive radiation of Tertiary mammals, with special emphasis on insectivores, primates, carnivores, proboscidiens, and ungulates. Prerequisite: EAS 230 or ZOOL 225 or ZOOL 200.

PALEO 414 Paleontology

★3 (*fi 6*) (second term, 3-0-3). Morphology, paleoecology and evolution, with emphasis on both the theoretical aspects and practical techniques of paleontology. Concentration on invertebrate paleontology, but examples from vertebrate paleontology and paleobotany included. Prerequisite: EAS 230. Not available to students with credit in PALEO 314.

211.179.2 Graduate Courses

Note: The following undergraduate courses may be taken for credit by graduate students: PALEO 318, 319.

†PALEO 512 Selected Topics in Paleontology

★3 (*fi 6*) (either term, 4-2s-0).

PALEO 520 Problems in Vertebrate Paleobiology

★3 (*fi 6*) (either term, 0-1s-0). Prerequisites: PALEO 318 and 319.

211.180 Reserved**211.181 Pathology**

Department of Laboratory Medicine and Pathology
Faculty of Medicine and Oral Health Sciences

211.181.1 Undergraduate Courses**PATH 411 General Pathology**

★3 (*fi 6*) (either term, 41 hours). Lectures on the pathological reactions of human tissues and laboratory periods.

PATH 421 Special Pathology

★3 (*fi 6*) (full session, 60 hours). Lectures on the special pathology of human disease and laboratory periods.

PATH 422 General Pathology

★3 (*fi 6*) (first term, 61 hours). Lectures on the principles of pathology, laboratory instruction in histo-pathology and an introduction to the functions of a pathology laboratory in a hospital.

211.181.2 Graduate Courses

Notes

- (1) PATH 501 and 502 are intended for residents in pathology, medical microbiology, surgery, or medicine. There are currently no other graduate courses available on human diagnostic pathology. PATH 506 and 507 are intended for residents in pathology, medical microbiology, surgery or medicine, and graduate students from the medical laboratory science program. There are currently no other graduate courses available on medical biochemistry.
- (2) Not all graduate courses are offered every year. The Department should be consulted regarding the availability of graduate courses in any academic session.

PATH 501 Cellular and Tissue Structure and General Mechanisms of Disease

★6 (fi 12) (full session, 78 hours). Advanced seminars on the Cell Cycle; Instrumentation and Techniques of Electron Microscopy; Pathobiology of Lysosomes, Mitochondria and Endoplasmic Reticulum; Humoral and Cellular Mechanisms in Immunology; Hypersensitivity; Autoimmune Diseases; Immunology of Cancer; Immunodeficiency Diseases; Transplantation Immunity; Evaluation of Renal Function; Glomerular Disease; Renal Vascular Diseases; Renal Transplantation; Renal Tumours; Hormonal Mammary Dysplasia; Mammary Tumours; Liver Function Tests; Viral Hepatitis; Cholestasis; Alcoholic Liver Disease; Acute and Chronic Hepatitis; Neoplasms of Liver; Fetal and Neonatal Pathology; Diseases of the Placenta. To be offered in alternate years. Restricted to Postgraduate Medical Education students or consent of Department.

PATH 502 Cellular and Tissue Structure and General Mechanisms of Disease

★6 (fi 12) (full session, 78 hours). Advanced seminars on Collagen Structure and Function; Blood Coagulation; Bleeding Disorders; Thrombosis and Embolism; Shock; Atherosclerosis; Amyloidosis; Glycogen Storage Diseases; Diabetes Mellitus; Parathyroid Pathology and Metabolic Bone Disease; Disorders of Melanin Metabolism; Nevi and Melanomas; Pathology of Skeletal Muscle; Pathology of the Small Intestine; Pathology of the Colon; Pulmonary Pathology; Pathology of Lymphoid Organs; Parasitology. To be offered in alternate years. Prerequisite: PATH 501, or consent of Department. Restricted to Postgraduate Medical Education students or consent of Department.

PATH 504 Seminars in General Pathology

★1 (fi 2) (either term, 1-0-0).

PATH 506 Medical Biochemistry

★6 (fi 12) (full session, 2-0-0). Advanced seminars on instrumentation, Hepatic, Renal, Pancreatic Endocrine and Exocrine Functions; Enzymology and Diagnostic Applications of Enzyme Determinations, Hyperlipidemias. Prerequisite: Undergraduate courses in Medical Physiology and Biochemistry. To be offered in alternate years.

PATH 507 Medical Biochemistry

★6 (fi 12) (full session, 2-0-0). Advanced seminars on Metabolic Disorders of Carbohydrates and Amino Acids, Nutritional Deficiencies and Malnutrition, Endocrine Functions, Organization and Quality Control in Medical Biochemistry. Prerequisite: PATH 506 or consent of Department. To be offered in alternate years.

PATH 510 Cryobiology I

★3 (fi 6) (first term, 2-1s-0). Physicochemical changes in aqueous solutions at low temperatures and responses of living cells and tissues to those changes. Current theories of damage and protection during freezing and thawing.

PATH 511 Cryobiology II

★3 (fi 6) (second term, 2-1s-0). Freeze-thaw responses of enzyme systems, individual cells and organized tissues. Preservation of spermatozoa, blood and bone marrow cells, embryos and various tissues. Approaches to the cryopreservation of organs and whole organisms. Applications in medicine and agriculture. Prerequisite: consent of Department.

PATH 520 Pathology Research Seminar

★1 (fi 2) (full session, 0-1s/2-0). Graduate seminars presented by graduate students, faculty and guests in the Department. Required of all pathology graduate students.

211.182 Petroleum Engineering

School of Mining and Petroleum Engineering, Department of Civil and Environmental Engineering Faculty of Engineering

Note: See also Materials Engineering; Mining, and Petroleum Engineering listings.

The following table lists renumbered courses effective 1993/94:

Old	New	Old	New
PET E 395	PET E 295	PET E 573	PET E 473
PET E 462	PET E 362	PET E 575	PET E 475
PET E 464	PET E 364	PET E 577	PET E 477
PET E 466	PET E 366	PET E 584	PET E 484
PET E 468	PET E 368	PET E 588	PET E 488
PET E 564	PET E 465	PET E 589	PET E 489
PET E 568	PET E 470	PET E 596	PET E 496

211.182.1 Undergraduate Courses

PET E 295 Introduction to Fundamental Petroleum Engineering

□3.8 (fi 6) (second term, 3-0-3/2). The relationships of geology, basic reservoir rock properties, surface and interfacial phenomena, the flow of fluids through porous media, classification of oil and natural gas reservoirs, and introduction to reserve estimation principles. Prerequisite: consent of Instructor. (★3)

PET E 362 Petroleum Reservoir Fluids

□3.8 (fi 6) (first term, 3-0-3/2). Qualitative and quantitative phase behavior of petroleum reservoir fluids through the algebraic and numerical application of thermodynamic theory, equations of state, and empirical correlations. Determination of engineering PVT parameters. Oilfield waters. Introduction to mass transfer. Prerequisites: CH E 243 and MATE 390. Corequisite: CHEM 271. (★3)

PET E 364 Oil Well Drilling and Completion

□3.5 (fi 6) (first term, 3-1s-0). Elements of rock mechanics, drilling fluids, factors affecting rate of penetration, formulation evaluation and well completions. Prerequisites: CIV E 270 and either CHEM 271 or CH E 243, or consent of Instructor. (★3)

PET E 366 Petroleum Production Operations

□3.0 (fi 6) (second term, 3-0-0). Land units in Western Canada, types and characteristics of well completions, perforating, wellbore damage and simulation, combined inflow and well performance analysis, multiphase flow through conduits, oil well pumping, gas lift, surface facilities and flow measurement, applied mass transfer. Prerequisites: PET E 362 and PET E 364, or consent of instructor. (★3)

PET E 368 Fundamentals of Well Test Analysis

□3.8 (fi 6) (second term, 3-0-3/2). A basic course in well test design and interpretation. Analysis methods for pressure drawdown, buildup, and interference tests. Principle of superposition and its application in well test analysis. Average reservoir pressure estimation. Effect of wellbore conditions on pressure behavior. An introduction to drill stem testing and gas well testing. Prerequisite: PET E 295 or consent of Instructor. (★3)

PET E 465 Well Logging and Formation Evaluation

□3.5 (fi 6) (first term, 3-1s-0). Theory and engineering applications of measurements of physical properties of the formation near the well bore; interpretation and use of the information in reservoir engineering. Prerequisite: PET E 362, or consent of Instructor. (★3)

PET E 470 Heavy Oil Recovery

□3.0 (fi 6) (first term, 3-0-0). The objectives of this course are to introduce the student to the current heavy oil recovery technology, and to develop the practical project design techniques. Emphasis will be on thermal methods, although nonthermal methods will be covered briefly. This is designed to be suitable for both undergraduate and graduate students. Prerequisite or corequisite: PET E 473. (★3)

PET E 471 Chemically Enhanced Oil Recovery

□3.0 (fi 6) (first term, 3-0-0). Classification of EOR methods. Chemical oil recovery methods. Principles of polymer flooding. Principles of surfactant flooding. Oil displacement by surfactant solutions, principles of alkaline flooding, principles of micellar flooding, oil displacement by micellar solutions, design of scaled models, other chemical oil recovery methods. Prerequisite: consent of Instructor. (★3)

PET E 473 Fundamental Reservoir Engineering

□3.8 (fi 6) (first term, 3-0-3/2). Rock properties, rock-fluid interaction, flow through porous media; material balance. Prerequisite: PET E 362 or consent of Instructor. (★3)

PET E 475 Applied Reservoir Engineering

□3.8 (fi 6) (second term, 3-0-3/2). Analysis and prediction of reservoir performance by use of material balance. Reservoir performance by use of decline curves. Fluid displacement, pressure maintenance and enhanced recovery. Prerequisite: PET E 473. (★3)

PET E 477 Modelling in Petroleum Engineering

□3.0 (fi 6) (second term, 3-0-0). Fundamentals of Modelling in Petroleum Engineering. Simulation methods as applied to specific problems in petroleum reservoir behavior. Examples will be drawn from primary, secondary and tertiary recovery phases of petroleum production. Prerequisites: PET E 473, ENCMP 100 and MATH 200 or equivalent. (★3)

PET E 484 Oil and Gas Property Evaluation

□3.5 (*fi 6*) (first term, 2-0-3). An economic and property evaluation in petroleum engineering involving exploration, drilling, production and development fundamentals and field case histories, Canadian oil and gas regulations, unitization and equalization of investment. Prerequisite: MEC E 310 or equivalent. (★3)

PET E 488 Petroleum Field Trip

□0.5 (*fi 1*) (either term, 0-1s-0). Students in their fifth and sixth terms will be required to make several trips to selected field installations, laboratories and industrial plants. (★0.5)

PET E 489 Petroleum Seminar

□1.0 (*fi 2*) (second term, 1-0-0). Meeting of students and staff for discussion of topics related to petroleum engineering. (★1)

PET E 496 Petroleum Engineering Design Project

□4.0 (*fi 6*) (either term, 1-6s-0). Designed to deal with special case studies in the Mining and Petroleum industries; an analysis of reserves; the prediction of production and operating procedures related to the project; the application of economics in the analysis of profitability; economics and planning as tools for a management position. Prerequisite: PET E 484 or consent of Instructor. (★3)

211.182.2 Graduate Courses**PET E 630 Petroleum Reservoir Engineering**

□3.0 (*fi 6*) (first term, 3-0-0). Characteristics of reservoir materials (rock, reservoir fluids); reservoir evaluation (volumetric method, material balance method with water influx), fundamental production processes (primary recovery). (★3)

PET E 632 Advanced Topics in Petroleum Production Mechanics

□3.0 (*fi 6*) (second term, 3-0-0). Concepts of reservoir engineering from an advanced point of view as applied to forecasting the performance of oil and/or gas reservoirs; combined driving mechanisms; applications to practical problems encountered during performance by primary means. (★3)

PET E 634 Secondary Recovery

□3.0 (*fi 6*) (second term, 3-0-0). Evaluation and operation of secondary recovery projects; fundamental consideration of petroleum engineering and reservoir behavior applied to secondary recovery of oil; recent technical papers. (★3)

PET E 635 Numerical and Analytical Solution of Porous Media Flow Problems

□3.0 (*fi 6*) (first term, 3-0-0). The goal of this course is to develop techniques for the solution of a wide variety of single phase flow problems in porous media for compressible and incompressible flow. Two dimensional flow will be considered for the greater part. Selected mathematical techniques, analytical as well as numerical, will be developed for specific problems. In a number of cases, analytical and numerical solutions will be compared. (★3)

PET E 644 Fluid Mechanics of Natural Gas Production

□3.0 (*fi 6*) (first term, 3-0-0). Review of natural gas properties; reserve estimation techniques and advanced treatment of water influx in gas reservoirs; steady and transient single-phase gas flow in porous media; non-Darcy flow; deliverability tests; transient gas well testing: single and multiphase flow in circular conduits. Normally offered in alternate years. (★3)

PET E 650 Reservoir Simulator Development

□3.0 (*fi 6*) (second term, 3-0-0). The principal objective of this course is the development of reservoir simulation theory to the level required for the construction of a three-phase, three-dimensional reservoir simulator. In addition to providing practice in developing a simulator, the course will also cover recent advances in simulation and history matching. (★3)

PET E 668 Advanced Well Test Analysis

□3.0 (*fi 6*) (first term, 3-0-0). Analytical techniques employed to solve complex well test problems. Pressure derivative analysis. Production time effects on buildup analysis. Pressure transient analysis for fractured wells. Layered reservoir testing. Prerequisite: PET E 368 or consent of Instructor. Normally offered in alternate years. (★3)

PET E 682 Graduate Seminar

□0.5 (*fi 2*) (variable, 0-1s-0). Discussion of progress and problems in research underway in the Department. (★1)

PET E 684 Oil and Gas Property Evaluation

□3.0 (*fi 6*) (either term, 3-0-0). Economic structure of the petroleum industry; oil and gas land tenure; factors influencing oil economics; time value of money; taxation of oil and gas properties and income; engineering analysis; application of data in the analysis; estimation of costs; evaluation of processing facilities; analysis of profitability; risk and decision analysis

in evaluations; the evaluation report. Note: not open to students with credit in PET E 484. (★3)

PET E 685 Advanced Economic Evaluation of Mineral Resources

□3.0 (*fi 6*) (either term, 3-0-0). Decision analysis and project profitability criteria; technical, cost, and venture feasibility studies; current economic evaluation methods; risk and uncertainty analysis; advanced economic evaluation methods; case studies in mineral economic evaluations. (★3)

PET E 694 Advanced Topics in Petroleum Engineering

□3.0 (*fi 6*) (either term, 3-0-0). An advanced treatment of selected petroleum engineering topics of current interest to staff and students. (★3)

PET E 732 Reservoir Engineering

□3.0 (*fi 6*) (either term, 3-0-0). (★3)

PET E 734 Secondary Recovery

□3.0 (*fi 6*) (either term, 3-0-0). (★3)

PET E 744 Natural Gas Engineering

□3.0 (*fi 6*) (either term, 3-0-0). (★3)

211.183 Pharmacology

Department of Pharmacology
Faculty of Medicine and Oral Health Sciences

211.183.1 Undergraduate Courses

The following courses can be used by students in the Faculty of Science as science courses: PMCOL 201, 292, 305, 332, 335, 336, 342, 403, 409, 412, and 415.

PMCOL 201 Introductory Pharmacology

★3 (*fi 6*) (either term, 3-0-0). An introduction to the discipline of pharmacology. What are drugs and how do they bring about their effects; how are drugs modified by the body; how are drugs developed and licensed for therapeutic use? These and related questions will be addressed and the underlying pharmacological principles illustrated with examples drawn from an array of commonly used drugs. Prerequisites: CHEM 101 and CHEM 102, and either BIOL 107 or BIOL 108.

PMCOL 305 An Introduction to the Pharmacology of Drug Abuse

★3 (*fi 6*) (either term, 3-0-0). An introduction to the complexities of drug abuse and the drugs of abuse. The student will be introduced to the psychological and social problems of drug abuse and their impact upon the abuser. Objectives of the course are to develop an understanding of addiction and a detailed knowledge of the nature of the commonly abused substances. Emphasis will be placed upon the pharmacology of drugs of abuse. Prerequisites: A 200-level Biological Sciences course (or equivalent) and consent of Department.

PMCOL 331 General Pharmacology

★6 (*fi 12*) (full session, 3-0-0). The pharmacological actions of drugs selected for their physiological and clinical significance. Basic pharmacological principles are applied to representative clinically important drugs having their primary actions on various organ systems of the body. The course includes a study of chemotherapeutic agents used in the treatment of infections and neoplasia. Restricted to students in the Faculty of Pharmacy and Pharmaceutical Sciences.

PMCOL 332 General Pharmacology

★6 (*fi 12*) (full session, 3-0-0). The pharmacological actions of drugs selected for their physiological and clinical significance. Basic pharmacological principles are applied to representative clinically important drugs having their primary actions on various organ systems of the body. The course includes a study of chemotherapeutic agents used in the treatment of infections and neoplasia. Prerequisites or corequisites: BIOCH 203, 205, PMCOL 201; and PHYSL 210 and consent of Department. Restricted to students in Pharmacology Specialization or Honors programs.

PMCOL 335 Experimental Procedures in Pharmacology

★3 (*fi 6*) (either term, 0-0-6). A laboratory course intended primarily for honors pharmacology students and advanced students in related disciplines. Using both intact and isolated tissue preparations, students will perform a variety of experiments of types commonly encountered in pharmacological research. The laboratory sessions will include didactic material and instruction in animal handling, humane methods of euthanasia, anesthesia, body fluid sampling, administration of drugs, and elementary surgical and dissection techniques required in the experiments. Prerequisite or corequisite: Normally restricted to students in Pharmacology Specialization program. PMCOL 332 or consent of Department.

PMCOL 336 Analytical Techniques

★3 (*fi 6*) (either term, 1-0-6). A laboratory course in which the use of biochemical techniques as applied to pharmacological problems will be emphasized. The course will include both a theoretical consideration of

the procedures under study, together with practical instruction and practice in their execution. Prerequisite or corequisite: Normally restricted to students in Pharmacology Specialization program. PMCOL 332 or consent of Department.

PMCOL 342 Scientific Basis of Pharmacology

★6 (*fi 12*) (full session, 3-0-0). A companion course to PMCOL 332. This course will provide detailed scientific information about the drugs studied in PMCOL 332. It is intended to provide a sound scientific knowledge of the mechanism of action of the relevant drugs. The experimental basis of present day clinical knowledge will be discussed in detail. Prerequisite or corequisite: PMCOL 332. Normally restricted to students in Pharmacology Specialization or Honors programs.

PMCOL 371 Cellular Neuroscience

★3 (*fi 6*) (first term, 3-0-0). Lectures presented by the Faculty of Medicine and Oral Health Sciences and the Faculty of Science on nerve cell membranes, ion channels, neurotransmitters and their receptors, synaptic mechanisms and plasticity, gene regulation and development, the physiology of small neural networks and disorders involving basic mechanisms. Prerequisite: PHYSL 210 or ZOOL 242.

PMCOL 392 The Elements of Pharmacology

★3 (*fi 6*) (either term, 3-0-0). This course will provide an overview of pharmacology as a science from its earliest days to the present. Emphasis will be placed upon the development of concepts of drug action. The student will also be introduced to the standard methodologies of quantitative pharmacology. Prerequisites or Corequisites: PMCOL 331 or 332 and consent of Department.

PMCOL 401 Pharmacology Tutorial

★3 (*fi 6*) (first term, 3-0-0). Research and Reading course.

PMCOL 402 Pharmacology Tutorial

★3 (*fi 6*) (second term, 3-0-0). Research and Reading course.

PMCOL 403 Introduction to Toxicology

★3 (*fi 6*) (first term, 3-0-0). The adverse effects of xenobiotics on biological systems are discussed. Principles of toxicology, including dose-response relationships and toxicant metabolism, are introduced. Responses of target organs to selected toxicants are described, with emphasis on molecular mechanisms; haloalkane and hydrocarbon solvents, heavy metals, carbon monoxide, cyanide, pesticides, pulmonary irritants, ethanol, and methanol serve as examples. Special topics include chemical carcinogenesis, teratogenesis, and the toxic effects of ionizing radiation, toxins, and food additives. Prerequisites: BIOCH 203 and 205, PHYSL 210, PMCOL 332, or approved courses in biochemistry and vertebrate physiology and consent of Department.

PMCOL 404 Advanced Chemotherapy

★3 (*fi 6*) (either term, 3-0-0). A discussion of chemotherapeutic agents used in the treatment of viral, bacterial, fungal, protozoal, and helminthic infections, and cancer. Some attention will be paid to new agents currently undergoing clinical evaluation. Detailed descriptions of the metabolism, mechanisms of action, pharmacokinetics, and adverse effects of selected chemotherapeutic agents will be presented, as will mechanisms of drug resistance. Prerequisites: BIOCH 203 and 205, PHYSL 210, PMCOL 332 (or equivalent), or approved courses in biochemistry and vertebrate physiology and consent of Department.

PMCOL 407 Neuromuscular Pharmacology

★3 (*fi 6*) (either term, 3-0-0). A detailed study of synaptic transmission, excitation-contraction coupling in skeletal muscle, and the drugs known to be active at these sites. Diseases of neuromuscular transmission, their etiology, and therapy will also be included. The scope of the lectures will range from molecular considerations, through structure-activity relationships, to clinical usefulness and experience. Prerequisites: PMCOL 332 or equivalent and consent of Department.

PMCOL 409 Current Research Topics in Pharmacology

★3 (*fi 6*) (either term, 3-0-0). An introduction to current areas of research in Pharmacology. The aim of the course is to provide students with an overview of recent developments and future trends in Pharmacology research and to illustrate how research problems are identified and addressed. Individual members of the Department of Pharmacology will provide background to their field of research followed by examples of the current research conducted in their own laboratories. In addition, some areas of research outside of those being pursued in the Department of Pharmacology will be covered. Topics will include the electrophysiological characterization of synaptic transmission in central and autonomic nervous systems, biochemical and molecular biological analysis of ion channels. Liposomes and immunopharmacology, nucleoside transporter processes, cardiovascular pharmacology and clinical pharmacology. Prerequisites: PMCOL 332 (or equivalent) and consent of Department.

PMCOL 411 Principles of Pharmacology

★2 (*fi 4*) (either term, 16 hours). Lectures are used to illustrate the basic principles of pharmacology. For first-year medical students only.

PMCOL 412 Drugs and the Nervous System

★3 (*fi 6*) (either term, 3-0-0). Pharmacological management of disease in the central nervous system is presented in the context of current knowledge of neuroscience and neurochemistry. Students with approved 300-level biological science course(s) and an interest in pharmacology and/or neuroscience are encouraged to enrol. Prerequisites: PMCOL 332 (or equivalent) and consent of Department.

PMCOL 415 Cardiovascular Pharmacology

★3 (*fi 6*) (either term, 3-0-0). A lecture course in which the pharmacology of drug action on the cardiovascular system is examined. Topics covered include the molecular and cellular mechanisms involved in drug action on both the vasculature and the heart, the mechanisms involved in myocardial ischemic injury, and the control of heart inotropoy and rhythmicity. The course will also provide an overview of current therapeutic options in the treatment of cardiovascular disease. Prerequisites: PMCOL 332 (or equivalent) and consent of Department.

PMCOL 421 Pharmacological Principles of Therapeutics and Toxicology

★4 (*fi 8*) (full session, 80 hours). Lectures and tutorials are used to illustrate the principles of Pharmacokinetics and Clinical Pharmacology, together with a focus on the rational use of drugs in the treatment of common diseases and the management of poisoning or overdose. For second-year medical students only.

PMCOL 433 Topics in Therapeutics and Problem Solving

★1 (*fi 2*) (either term, 23 hours). For third-year medical students only.

PMCOL 498 Pharmacology Research Program

★6 (*fi 12*) (full session, 0-0-6). During their fourth year all honors candidates are required to carry out a program of directed research under the supervision of a staff member. This program will be related to the special interest of the student and will involve experimental work as well as a written report on the part of the student. Prerequisite: consent of Department. Available to fourth-year honors students only.

PMCOL 499 Pharmacology Honors Seminar

★0 (*fi 2*) (full session, 0-1s-0). All fourth year honors students will be required to attend the regular seminars, presented by internal and external speakers, and to present at least one seminar based upon a selected topic from the literature or from their research project during the course of the academic year. Prerequisite: consent of Department. Available to fourth-year honors students only.

211.183.2 Graduate Courses

Note: Not all graduate courses are offered each year. The Chair of the Department should be consulted regarding the prerequisites for and availability of graduate courses in any academic session.

PMCOL 501 Pharmacology Tutorial, Research, and Reading Course

★3 (*fi 6*) (first term, 3-0-0).

PMCOL 502 Pharmacology Tutorial, Research, and Reading Course

★3 (*fi 6*) (second term, 3-0-0).

PMCOL 503 Pharmacology Tutorial, Research, and Reading Course

★3 (*fi 6*) (Intersession, 3-0-0).

PMCOL 504 Advanced Topics in Toxicology

★3 (*fi 6*) (either term, 3-0-0). A discussion of selected topics of current interest in toxicology, including issues in environmental and occupational toxicology, forensic toxicology, mechanisms of cellular injury by toxicants, and mechanisms of chemical carcinogenesis. This course is intended for senior undergraduate and graduate students. Prerequisites: PMCOL 403 (or equivalent) and consent of Department.

PMCOL 505 Cancer Chemotherapy

★3 (*fi 6*) (either term, 3-0-0). A survey of biochemical, cellular, and clinical pharmacology of agents currently employed in chemotherapy of neoplastic disease; drug metabolism, adverse effects, mechanisms of action and of resistance will be discussed. Prerequisites: BIOCH 203 and 205 or equivalent and consent of Department.

PMCOL 506 The Actions of Drugs on Membranes

★3 (*fi 6*) (either term, 3-0-0). This course will examine the interactions of drugs with biological membranes and model membrane systems. The effects of various classes of drugs on membrane permeation processes, receptors, lipids, and enzymes will be explored in class discussions of assigned reading from the current literature. The major emphasis will be on plasma membranes of vertebrate cells. Prerequisite: consent of Instructor.

PMCOL 508 Molecular Pharmacology

★3 (*fi 6*) (either term, 3-0-0). This course aims to provide an understanding of the general mechanisms of drug action at the molecular level. Theoretical aspects of drug-receptor interaction are presented in detail followed by a consideration of the mechanisms of signal transduction that have

been associated with different receptor types. Prerequisite: consent of Department.

PMCOL 509 Biophysical Aspects of Neuropharmacology

★3 (*fi 6*) (either term, 3-0-0). This course aims to provide an examination in depth of the mechanisms of action of drugs at the level of the single excitable cell. The course includes a review of basic membrane biophysics, neurotransmitter release mechanisms and post synaptic effects of neurotransmitters and other ligands. Time will also be devoted to selected special topics. Prerequisite: consent of Department.

PMCOL 510 Advanced Topics

★3 (*fi 6*) (first term, 3-0-0).

PMCOL 511 Advanced Topics

★3 (*fi 6*) (second term, 3-0-0).

PMCOL 512 Neurotransmitters

★3 (*fi 6*) (either term, 3-0-0). Current concepts of neurotransmitters, neuromodulators and trophic factors are discussed in the context of the normal, diseased and developing nervous systems. Students should have some biological background either in physiology, pharmacology, zoology, or the neurosciences. Prerequisite: consent of Department.

PMCOL 515 Advanced Topics in Cardiovascular Pharmacology

★3 (*fi 6*) (either term, 3-0-0). Current concepts of cardiovascular pharmacology will be discussed in the context of the normal and diseased cardiovascular system. Recent developments and use of the literature will be emphasized. Prerequisites: PMCOL 415 and consent of Department.

PMCOL 600 Seminar in Pharmacology

★0 (*fi 2*) (full session, 0-1s-0). Open to graduate students in the Department of Pharmacology and other interested graduate students. Speakers either from the University of Alberta or invited from elsewhere will present weekly research seminars on topics related to pharmacology and the interests of the Department. Graduate students will be required to present at least one seminar based on a topic from the literature or their research project during the year. Prerequisite: consent of Department.

211.184 Pharmacy

Faculty of Pharmacy

211.184.1 Undergraduate Courses

PHARM 302 Introduction to the Profession of Pharmacy

★3 (*fi 6*) (first term, 3-4s-0). Introduction to the Canadian Health Care System, the pharmacist's role and the needs of patients. Information and use of some non-prescription drugs, medical surgical products and basic emergency treatment. Development of verbal communication skills. (Restricted to Pharmacy students.)

PHARM 303 Pharmacy Dispensing Procedures and Pharmaceutical Calculations

★3 (*fi 6*) (second term, 3-0-3). An introduction to the technical aspects of dispensing, pharmaceutical calculations, dosage forms and drug procurement. Development of basic patient medication counselling skills. Exposure to the need for accuracy and accountability as a professional responsibility. Prerequisite: PHARM 302. (Restricted to Pharmacy students.)

PHARM 320 Introduction to Medicinal Chemistry

★6 (*fi 12*) (full session, 3-0-0). The development of drugs. Physicochemical properties and biologic activity. The relationship of these properties to the absorption, distribution and elimination of drugs. The metabolism of drugs, enzymes, pathways, mechanisms and substrates. Drug-receptor interactions and receptor-site theory. Prerequisites: CHEM 101/102 and CHEM 161/163. Corequisite: PHYSL 252. (Restricted to Pharmacy students.)

PHARM 325 Introduction to Quantitative Pharmaceutical Analysis

★3 (*fi 6*) (second term, 3-0-3). Chemical methods of quantitative analysis. The laboratory exercises consist of both instrumental and non-instrumental pharmacopoeial techniques that are widely employed in the analysis of pharmaceuticals. Prerequisites: CHEM 101/102 and 161/163. (Restricted to Pharmacy students.)

PHARM 340 Pharmacy Administration

★3 (*fi 6*) (second term, 3-2s-0). An introduction to the elements of pharmacy administration consisting of: management principles, pharmaceutical marketing, and practice management. Provides the student with an understanding of the economic, political, and professional environment of the profession of pharmacy. (Restricted to Pharmacy students.)

PHARM 352 Jurisprudence and Ethics

★3 (*fi 6*) (first term, 3-1s-3). A study of the laws governing the practice of pharmacy, an understanding of the legal rights and responsibilities of the pharmacist, and a practical application of these laws. Ethical theories and principles and their application in pharmacy practice. Development

of verbal communication skills with emphasis on pharmacist-patient, and pharmacist-other health professional relationships. A study of the psychological aspects of illness. Prerequisite: PHARM 303. (Restricted to Pharmacy students.)

PHARM 360 Pharmaceutics

★6 (*fi 12*) (full session, 3-1L-2). Principles of pharmaceutical dosage forms. Factors affecting the physical and chemical behavior of drug products. Rationale underlying the formulation and compounding techniques of pharmaceutical preparations. Prerequisites: PHARM 303 and MATH 113. (Restricted to Pharmacy students.)

PHARM 370 Medicinal Chemistry

★6 (*fi 12*) (full session, 3-0-0). The study of organic medicinal substances. The design and synthesis, physico-chemical properties, mechanism of action, metabolism and structure-activity relationships of drug classes are discussed. Prerequisite: PHARM 320.

PHARM 380 Introduction to Disease Processes

★3 (*fi 6*) (first term, 3-0-0). The nature of disease, causes, processes, effects and associated alterations in structure and function. Prerequisite or corequisite: ANAT 200, PHYSL 252. (Restricted to Pharmacy students.)

PHARM 403 Toxicology of Drugs and Related Products

★3 (*fi 6*) (either term, 3-3s-0). Topics discussed include poisoning and its emergency treatment; toxicity of analgesics, antibiotics, iron, common drugs and household products, food additives; CNS and PNS toxicity; nephrotoxicity and hepatotoxicity; toxicity to the ear; ocular and epidermal toxicity; toxicity of pesticides and herbicides; neonatal and geriatric toxicology; carcinogenicity and teratology; porphyrias, blood dyscrasias; placental transfer of drugs; drugs in milk. Corequisites: PHARM 415 and 431. (Restricted to Pharmacy students.)

PHARM 404 Clinical Pharmacy

★3 (*fi 6*) (second term, 3-0-0). Lecture/discussion sessions are used to demonstrate clinical pharmacy responsibilities in a selected number of areas. Experience will be gained in using a case history, patient management approach to clinical problem solving. Topics of discussion include clinical laboratory tests, applied clinical pharmacokinetics, advanced OTCs, drug information, drug substance abuse, and clinical drug interactions. Corequisite: PHARM 431. (Restricted to Pharmacy students.)

PHARM 405 Introduction to Institutional Practice and Patient Counselling with the Emphasis on Nonprescription Drugs

★3 (*fi 6*) (first term, 3-1s-3). An understanding of the drug distribution system in hospitals. An evaluation of drug literature. Introduction to the workshop format and patient interviewing. An understanding of the role of self-medication in health care. An introduction to nonprescription drug products and the Drug Caution Code. Prerequisite: PHARM 352. (Restricted to Pharmacy students.)

PHARM 406 Monitoring Drug Therapy Based on Patient Interviews, Patient Counselling and Drug Information

★3 (*fi 6*) (second term, 3-1s-3). Lectures and laboratory exercises to develop the student's skills in clinical pharmacy practice relating to patient interviewing, dispensing, counselling and monitoring drug therapy. Prerequisites: PHARM 405, 415, and PMCOL 331. Corequisite: PHARM 331. (Restricted to Pharmacy students.)

PHARM 415 Biopharmaceutics and Pharmacokinetics

★3 (*fi 6*) (first term, 3-0-0). Application of biopharmaceutics and pharmacokinetics to patient care and drug therapy. Clinical pharmacokinetics of selected classes of drugs. Prerequisites: PHARM 320 and PHARM 360. Corequisite: PHARM 431.

PHARM 431 Therapeutics

★6 (*fi 12*) (full session, 3-0-0). Integrated lectures and seminars on the pharmacological action of drugs and the therapeutics of common diseases. Basic pharmacological principles; mechanisms of actions of drugs; rationale of drug therapy and problems associated with the use of drugs in the disease state; the role of the pharmacist in therapeutics. Prerequisite: PMCOL 331. (Restricted to Pharmacy students.)

PHARM 432 Antimicrobial Agents and Infectious Diseases

★3 (*fi 6*) (second term, 3-2s-0). Integrated lectures and seminars on the use of antimicrobial agents in infectious diseases. Antibacterial, antifungal and antiviral agents will be discussed under the following headings: structure and relation to activity, mechanism of action, antimicrobial spectrum of activity, development of microbial resistance, pharmacokinetic properties and therapeutic use. Seminars and case studies focus on the pathogenesis and treatment of selected infectious diseases. (Restricted to Pharmacy students.)

PHARM 443 Radiopharmaceutical Sciences I

★3 (*fi 6*) (second term, 3-0-0). Basic principles involving the application of radiation and radioactive compounds in medical diagnosis, therapy and industry. Rationale for utility, preparation and quality control of radiopharmaceuticals. Biologic effects of various radiations. Prerequisites: ANAT 200, PHYSL 252, BIOCH 203/205.

PHARM 456 Clinical Pharmacy Rotations

★15 (*fi 30*) (either term, 12 weeks of clinical experience). The student will be expected to demonstrate professional and technical competencies in a variety of practice situations, including counselling patients, obtaining medication histories, providing drug information, monitoring and evaluating drug therapy, adverse drug reaction assessment and reporting, and therapeutic drug monitoring. Prerequisites: PHARM 403 and 431, PMCOL 331. (Restricted to Pharmacy students.)

PHARM 457 Contemporary Issues in Pharmacy

★2 (*fi 4*) (either term, 1-0-0). Historical developments, impact, and significance of developments in the field of pharmacy. (Restricted to Pharmacy students.)

PHARM 458 Hospital Pharmacy

★3 (*fi 6*) (either term, 3-0-0). Current literature analysis and presentation of modern concepts in drug distribution, drug information systems, application of data processing to decentralized pharmacy services and administrative principles peculiar to institutional pharmacy. (Restricted to Pharmacy students.)

PHARM 460 Sterile Products

★3 (*fi 6*) (either term, 3-0-3). This course is designed as a comprehensive education in sterile pharmaceutical products that may be prepared and/or dispensed by a hospital pharmacy department. Specific distribution systems and administration techniques will also be discussed. In addition to didactic education, practical experience will be provided in the laboratory section of the course. Prerequisite: PHARM 360. (Restricted to Pharmacy students.)

PHARM 461 Sterile Products

★3 (*fi 6*) (either term, 3-0-0). Lecture portion only of PHARM 460. Prerequisite: PHARM 360. Restricted to Pharmacy students.

PHARM 483 Home Health Care

★3 (*fi 6*) (second term, 3-0-0). To acquaint students with the variety of home health care products; to demonstrate the proper assembly, fitting, adjustment, and use of various products and supplies; to discuss the economics, marketing, and management of running a home health care department and supplying home health care products and services. (Restricted to Pharmacy students.)

PHARM 484 Immunization for Health

★3 (*fi 6*) (second term, 3-0-0). Current principles of immunization – recommended immunization schedules, vaccines against viral and bacterial diseases of concern to Canadians; immunization and health considerations for health care professionals, international travellers, and day care attendees; selected topics of current interest, time permitting.

PHARM 489 Seminars in Therapeutics and Professional Practice

★3 (*fi 6*) (either term, variable). A seminar course for fourth year pharmacy students covering selected topics in therapeutics, pharmacokinetics and clinical pharmacy. Prerequisites: PHARM 403, 415, and 431. (Restricted to Pharmacy students.)

PHARM 493 Pharmaceutical Biotechnology

★3 (*fi 6*) (either term, 3-0-0). An introduction to the development of protein and peptide drugs, vaccines, and other drugs produced by biotechnological techniques involving molecular biology and/or genetic manipulations. Topics will include basic principles, descriptions of objectives and methodology, and examples of modern drugs produced by these techniques. Therapeutic effects and clinical implications of currently marketed products will be addressed. Prerequisites: PHARM 431, BIOCH 203/205 and MICRB 193 or consent of the Faculty.

PHARM 494 Pharmacy Management: Selected Topics

★3 (*fi 6*) (either term, variable). Continuation of PHARM 340 with emphasis on financial management and the management of human resources. Projects on pharmacy operations. Prerequisite: PHARM 340.

PHARM 498 Pharmaceutical Research

★3 (*fi 6*) (either term, 0-0-4). Investigational work under the direction of a member of the Faculty. Preparation of a written report. Prerequisites: consent of the Faculty and the approval of a Faculty member to direct the research. This course may be taken during the Intersession by special arrangement. (Restricted to Pharmacy students.)

211.184.2 Graduate Courses

Note: The following undergraduate courses may be taken for credit by graduate students: PHARM 415, 473, 481, 484, 494, 496.

PHARM 565 Clinical Pharmacokinetics

★3 (*fi 6*) (either term, 2-2s-0). A comprehensive course dealing with basic pharmacokinetic principles of dosage regimen calculation and pharmacokinetic considerations relating to the use of various drugs. Clinical pharmacokinetics of therapeutically important drugs will be covered in detail. The laboratory portion is designed to expose the students to the methods used in dosage-regimen adjustment based on the clinical status

of the patient. Prerequisites: PHARM 415 and 431, PMCOL 331 and consent of the Faculty. (Restricted to Pharmacy students.)

PHARM 570 Advanced Pharmaceutical Analysis – Spectroscopy

★3 (*fi 6*) (first term, 3-0-3). Applications of instrumental methods of analysis (ultraviolet and infrared spectroscopy; NMR; mass spectrometry; atomic absorption spectroscopy) to pharmaceutical compounds. Offered in odd-numbered years. Prerequisite: PHARM 325 or consent of Faculty.

PHARM 575 Advanced Pharmaceutical Analysis

★3 (*fi 6*) (first term, 3-0-3). The theory and application of chromatographic techniques to the identification and quantitation of drugs, drug metabolites, and toxic substances. An introduction to forensic analyses, types of screening tests, and the systematic analysis of biological samples for drugs and specific poisons. Prerequisite: PHARM 325 or consent of the Faculty. Offered in even-numbered years.

PHARM 586 Pharmaceutical Toxicology

★3 (*fi 6*) (either term, 3-3s-0). Methods used to evaluate the toxic potential of drugs and other chemicals, including a discussion of selected topics in toxicology, such as environmental hazards, respiratory toxicity and neurotoxicity of chemicals. Seminars will cover specific problems in predictive toxicology and the toxicity of specific agents. Prerequisites: PHARM 431 and PMCOL 331 or consent of the Faculty.

PHARM 593 Advanced Radiopharmaceutical Sciences II

★3 (*fi 6*) (first term, 3-0-4). Application of radionuclides in medical diagnosis and treatment; control of radionuclides in the hospital. Laboratory: preparation, quality control and clinical utility of currently used radiopharmaceuticals in nuclear medicine. Prerequisite: PHARM 443 or PHARM 601 or consent of Faculty.

PHARM 595 Clinical Rotations

★6 (*fi 12*) (full session, 900 hours). A clinical experience which will provide the student with the opportunity to practice clinical pharmacy in several speciality areas. The student will be expected to demonstrate professional competence in patient counselling, obtaining medication histories, providing drug information, applied pharmacokinetics and related areas. Credit will be granted after the completion of 900 hours of approved clinical training.

PHARM 596 Pharmaceutical Marketing

★3 (*fi 6*) (first term, 3-0-0). An examination of the process of marketing pharmaceuticals in Canada. Topics to be covered are: pre-marketing requirements, regulatory control over drugs, price and product competition, promotion and advertising of pharmaceuticals, channels of distribution, packaging, ethics, price, and group purchasing. The course stresses the unique factors to be considered in marketing pharmaceuticals. Prerequisite: PHARM 340.

PHARM 601 Isotope Tracer Methodology I

★3 (*fi 6*) (first term, 3-0-3). Fundamental principles of radioactivity and health physics. The importance of radioisotopes in medicine, agriculture, industry, and research. Problems and limitations in the use of radioisotopes as tracers. Instrumentation and analysis methods. Experimental procedures, application of methods of analysis and criteria for evaluation of results. Laboratory: handling and preparation of radioisotopes for counting. Counting procedures. Tracer chemical and biochemical analyses.

PHARM 603 Activation Analysis

★3 (*fi 6*) (second term, 2-0-0). Physical and chemical basis of activation analysis, use of slow neutrons from the Slowpoke reactor, proton and charged particle activation; x-ray fluorescence; modern pulse-height analysis technique. Prerequisite: consent of Faculty. Note: Offered alternate years.

PHARM 604 Applied Problems in Current Research

★3 (*fi 6*) (either term, 0-0-3). The student will work with one or two faculty members on special research techniques in bionucleonics or radiopharmacy. Prerequisite: consent of Faculty.

PHARM 605 Radiopharmaceutical Chemistry

★2 (*fi 4*) (second term, 2-0-0). A discussion of preparation of short-lived radiopharmaceuticals with emphasis on radiochemical synthesis using carbon-11, fluorine 18 and radionuclides of iodine and bromine; stability, storage and purity of radio-labelled compounds; labelling with long-lived radionuclides. Prerequisite: consent of Faculty. Note: Offered alternate years.

PHARM 606 Current Topics in Bionucleonics and Radiopharmacy

★3 (*fi 6*) (either term, 3-0-0). Assigned readings, tutorials and seminars in recent advances in the fields of bionucleonics and radiopharmacy, conducted under the direction of several faculty members. Prerequisites: PHARM 601, 603, 604 or consent of Faculty.

PHARM 610 Advanced Physical Pharmacy

★3 (*fi 6*) (first term, 3-0-4). Special topics of a physical-chemical nature applicable to pharmaceutical systems. Emphasis is given to principles of colloid and surface science. Applications to dosage form design and biological systems are considered. Laboratory: experimental work in

application of physicochemical principles to pharmaceutical systems. Prerequisite: consent of Faculty.

PHARM 611 Pharmaceutical Formulation and Development

★3 (fi 6) (second term, 3-0-4). Theoretical considerations basic to the technology of pharmaceutical dosage forms to meet the requirements of therapeutic efficacy, stability, and safety. Laboratory: development and formulation of pharmaceutical products. Prerequisite: consent of Faculty.

PHARM 615 Advanced Pharmacokinetics

★3 (fi 6) (second term, 3-0-0). This course deals with the theoretical aspects of pharmacokinetics. Compartmental and non-compartmental theories are treated in depth. The application of these theories is made in various areas where kinetics are involved. Prerequisite: PHARM 415 or equivalent or consent of Faculty. Note: Offered alternate years.

PHARM 624 Application of Nuclear Magnetic Resonance Spectroscopy to Medicinal and Pharmaceutical Chemistry

★3 (fi 6) (first term, 3-0-0). Basic interpretation and examples of use of NMR spectroscopy in problems of pharmaceutical synthesis and its studies of the mode of action of medicinally active compounds. Prerequisite: consent of Faculty. Note: Offered alternate years.

PHARM 626 Applications of Mass Spectrometry to Medicinal and Pharmaceutical Chemistry.

★3 (fi 6) (either term, 3-0-0). Examples of the use of mass spectrometry in the identification of medicinal compounds are considered. Diagnostic spectra of extracts of medicinal preparations, identification of drug metabolites and applications of mass spectrometry to chemical toxicology and neurochemistry are studied. Prerequisite: consent of Faculty. Note: Offered alternate years.

PHARM 630 The Metabolism and Excretion of Drugs

★3 (fi 6) (second term, 3-0-0). The chemistry, biochemistry and kinetics of drug metabolism together with the factors affecting metabolism; the practical aspects of in vitro and in vivo studies of drug metabolism; the excretion of drugs by various routes and factors affecting excretion, the kinetics of excretion. Note: Offered alternate years.

PHARM 664 Advanced Topics in Clinical Pharmacy

★3 (fi 6) (first term, 1-0-3). Tutorial and practicum sessions used to review advances in therapeutics and to demonstrate clinical pharmacy responsibilities in a selected number of disease states. The student will have the opportunity to develop practical skills in establishing safe and effective drug use and in providing patient directed information on specific therapeutic agents. Major areas such as hypertension, diabetes and renal disorders will be considered. Prerequisites: PHARM 404, 431, and PMCOL 331 or consent of Faculty.

PHARM 690 Advanced Seminar in Pharmacy and Pharmaceutical Sciences

★3 (fi 6) (either term, 3-0-0). Assigned readings, tutorials, and seminars on recent advances and methodological approaches in Pharmacy, conducted under the direction of academic staff members in the Faculty of Pharmacy and Pharmaceutical Sciences.

PHARM 691 Methods in Pharmacy Practice Research

★3 (fi 6) (either term, 0-3s-0). A review of major approaches in pharmacy administration research. Some of the topics to be covered are: cost-benefit analysis, workload measurement, pricing methods, and quality improvement.

PHARM 694 Directed Project

★3 (fi 6) (either term, 0-0-3). Directed studies in pharmaceutical research, using one or more techniques of special interest to individual students. Prerequisites: consent of the Faculty and the supervising faculty member.

PHARM 697 Graduate Seminar

★0 (fi 1) (either term, 0-1s-0). Seminar training and short seminar presentations on topics related to the student's field of research. Normally to be taken during the student's second or third term. Required of all MSc and PhD students.

PHARM 698 Graduate Seminar

★0 (fi 1) (either term, 0-1s-0). Seminar presentation based on the student's research. Normally to be taken during the final term, prior to thesis defense. Required of all MSc and PhD students.

PHARM 900 Directed Research Project

★6 (fi 12) (variable).

211.185 Philosophie

Faculté Saint-Jean

PHILE 125 Logique pratique

★3 (fi 6) (l'un ou l'autre semestre, 3-1s-0). Les procédés et les principes d'analyse des arguments. La matière du cours pourra inclure les sophismes informels, l'initiation à la méthode scientifique, le raisonnement statistique

élémentaire, la logique "propositionnelle" élémentaire et les procédés susceptibles de mener à une décision rationnelle. Note: La priorité sera accordée aux étudiants du BA de la Faculté Saint-Jean. Anciennement PHILE 121 ou 221.

PHILE 140 Introduction à la philosophie occidentale

★6 (fi 12) (sur deux semestres, 3-0-0). Introduction aux principaux problèmes et théories qui ont dominé la pensée philosophique en Occident, par l'étude et la discussion critique de quelques classiques de la philosophie. Les lectures incluront la *République* de Platon et les *Méditations métaphysiques* de Descartes et une oeuvre majeure de Hobbes, Locke, Berkeley ou Hume. Anciennement PHILE 240.

Note: A moins d'indication contraire, il n'y a pas de prérequis formels pour les cours au niveau 200. Toutefois, les étudiants qui désirent s'inscrire à ces cours trouveront qu'il est très avantageux d'avoir d'abord suivi un cours de philosophie du niveau 100, tel le 125 ou le 140. Il est recommandé aux étudiants qui veulent poursuivre des études en logique formelle de consulter la note (1) dans la description des cours sous "philosophy," Faculté des Arts.

PHILE 209 Une étude philosophique de l'être humain

★3 (fi 6) (l'un ou l'autre semestre, 3-0-0). Un regard sur l'être humain: sa connaissance, ses façons d'aimer. Anciennement PHILE 302.

PHILE 215 Critique de la connaissance

★3 (fi 6) (l'un ou l'autre semestre, 3-0-0). Introduction aux questions visant la connaissance, surtout en ce qui concerne ses sources et sa justification. Ce cours comporte des sujets de discussion, tels le scepticisme et la certitude; la vérité, la foi ou la croyance et la justification; la connaissance du monde extérieur; la perception, la pensée et la mémoire; la connaissance a priori et empirique. Anciennement PHILE 322 ou 301.

PHILE 357 Philosophie de la religion

★3 (fi 6) (l'un ou l'autre semestre, 3-0-0). Sujets généraux dans la philosophie de la religion; on choisira parmi les sujets suivants: le concept de "religion"; rapports entre philosophie et religion; arguments pour et contre l'existence de Dieu; sens et intelligibilité dans le langage religieux; religion et moralité; la religion et "le sens de la vie"; portée de l'étude de la religion sur les Sciences Sociales. Note: Ce cours n'est pas accessible aux étudiants ayant un postulat des crédits en PHILE 290.

PHILE 386 La bioéthique

★3 (fi 6) (l'un ou l'autre semestre, 3-0-0). Regard philosophique sur les problèmes majeurs de la bioéthique. Exemples: les droits et les devoirs du personnel hospitalier et du patient, l'euthanasie active et passive, le droit à la vie et l'avortement, la recherche et l'expérimentation en médecine humaine et animale, la manipulation génétique.

211.186 Philosophy

Department of Philosophy
Faculty of Arts

Notes

- (1) See also INT D 331 and 498 for courses which are offered by more than one department or Faculty and which may be taken as options or as a course in this discipline.
- (2) No junior course presupposes background in Philosophy. PHIL 101, 102, and 120 are recommended for all students intending to continue in Philosophy. Courses at the 200-level are intended to provide a foundation for further study in Philosophy.
- (3) There are no formal prerequisites for 200- or 300-level courses (except for PHIL 220). Entrance to 400-level courses requires six units of course weight of prior courses in Philosophy, at least three of which must be at the 200-level.

The following table lists renumbered courses effective 1997/98:

Old	New
PHIL 395	PHIL 453
PHIL 320	PHIL 420

The following table lists renumbered courses effective 1994/95:

Old	New	Old	New
PHIL 210	PHIL 375	PHIL 290	PHIL 357
PHIL 260	PHIL 387	PHIL 293	PHIL 331
PHIL 262	PHIL 385	PHIL 301	PHIL 215
PHIL 264	PHIL 386	PHIL 310	PHIL 265
PHIL 266	PHIL 355	PHIL 330	PHIL 242
PHIL 272	PHIL 382	PHIL 340	PHIL 245
PHIL 274	PHIL 332	PHIL 372	PHIL 473
PHIL 282	PHIL 351		

211.186.1 Undergraduate Courses

PHIL 101 Introduction to Philosophy: Values and Society

★3 (fi 6) (either term, 2-1s-0). An introduction to the classical problems

of philosophy through study and critical discussion of selected philosophical classics and contemporary works. Emphasis will be placed on questions of moral and other values and on the nature of society and justice. Note: Not open to students with credit in PHIL 130 or 140.

S PHIL 102 Introduction to Philosophy: Knowledge and Reality

★3 (*fi 6*) (either term, 2-1s-0). An introduction to the classical problems of philosophy through study and critical discussion of selected philosophical classics and contemporary works. Emphasis will be placed on questions of the nature and extent of human knowledge and classic problems about the nature of reality and our place in it. Note: Not open to students with credit in PHIL 130 or 140.

S PHIL 110 Philosophical Texts

★3 (*fi 6*) (either term, 0-3s-0). Intensive study of different modes of philosophical writing including dialogue, meditation, essay, aphorism, treatise, formalized argument, etc. Excerpts from a range of major and minor authors (e.g. Augustine, Descartes, Montaigne, Rousseau, Nietzsche, Quine) will be studied. The course emphasizes the close reading and analysis of texts.

S PHIL 120 Symbolic Logic I

★3 (*fi 6*) (either term, 3-0-0). A study of sentential logic, including translation, semantics, decision procedures and natural deduction followed by an introduction to predicate logic, concentrating on translation. Note: Not open to students with credit in PHIL 220.

S PHIL 125 Practical Logic

★3 (*fi 6*) (either term, 3-0-0). Elementary methods and principles for analyzing reasoning as it occurs in everyday contexts. Topics may include informal fallacies, introduction to scientific method, elementary statistical reasoning, elementary sentential logic, as well as the study of argument in contemporary debates about issues of social concern. Note: Not open to students with credit in PHIL 121 (in 1991/92) or PHIL 221 (prior to 1991/92).

S PHIL 200 Metaphysics

★3 (*fi 6*) (either term, 3-0-0). Basic questions concerning the nature of reality. Topics may include existence, materialism and idealism, freedom and determinism, appearance and reality, causality, identity, time and space, universals and particulars.

S PHIL 205 Philosophy of Mind

★3 (*fi 6*) (either term, 3-0-0). Approaches to the question of what it means to be a person and have a mind. The relationship of philosophical ideas to scientific investigations of mental phenomena will be studied. Topics may include the mind-body relationship, personal identity, memory, imagination, intention and the will, desire, emotion and sensation.

S PHIL 215 Epistemology

★3 (*fi 6*) (either term, 3-0-0). A study of such central topics in the theory of knowledge as truth and rationality, scepticism and the limits of knowledge, relativism and the objectivity of knowledge, the role of perception, memory and reason as sources of knowledge. Note: Not open to students with credit in PHIL 301.

S PHIL 220 Symbolic Logic II

★3 (*fi 6*) (either term, 3-0-0). A brief review of sentential logic followed by an intensive study of predicate logic with identity. Topics include translation, semantics, decision procedures, natural deduction systems, mathematical induction. Other topics include: theories of definite descriptions, elementary modal logic, formal axiomatic systems. Prerequisite: PHIL 120 or consent of Department.

S PHIL 230 Greek Philosophy to Plato

★3 (*fi 6*) (either term, 3-0-0). A survey of the thought of the ancient Greek world from its beginnings with the Pre-Socratics up to and including Plato.

S PHIL 240 Descartes to Hume

★3 (*fi 6*) (either term, 3-0-0). A survey of Philosophy in the 17th- and 18th centuries. Philosophers studied will include Descartes, Leibniz, Spinoza, Locke, Berkeley, and Hume.

S PHIL 242 Aristotle and Hellenistic Philosophy

★3 (*fi 6*) (either term, 3-0-0). The thought of the ancient Greek world from Aristotle into the Hellenistic period. Note: Not open to students with credit in PHIL 330.

S PHIL 245 Kant to Nietzsche

★3 (*fi 6*) (either term, 3-0-0). A survey of the philosophy of Kant and the 19th-century. Philosophers studied will include Kant, Hegel, Marx, the Utilitarians, and Nietzsche. Note: Not open to students with credit in PHIL 340.

S PHIL 250 Ethics

★3 (*fi 6*) (either term, 3-0-0). An examination of questions of right and wrong, good and evil, and reasons for action, through the study of ethical thought of authors such as Plato, Aristotle, Hobbes, Kant, and Mill.

S PHIL 265 Philosophy of Science

★3 (*fi 6*) (either term, 3-0-0). An introduction to the central issues in

contemporary philosophy of science. Topics may include theory evaluation, paradigm shifts and theory change, laws of nature, causation and explanation, the rationality of science and its social and historical setting. Note: Not open to students with credit in PHIL 310.

S PHIL 270 Political Philosophy

★3 (*fi 6*) (either term, 3-0-0). A survey of issues in contemporary political philosophy with attention to liberalism and communitarianism, sovereignty, feminism, entitlement and distribution, and global justice.

S PHIL 280 Philosophy of Art

★3 (*fi 6*) (either term, 3-0-0). An introduction to some of the traditional theories, such as the expressionist and the formalist theories, which investigate the nature and function of the arts. The nature of aesthetic experience will also be considered.

S PHIL 291 Existentialism

★3 (*fi 6*) (either term, 3-0-0). An introduction to the background and main themes of existentialist philosophy. Authors such as Kierkegaard, Nietzsche, Heidegger, and Sartre are considered.

S PHIL 316 Philosophy of the Social Sciences

★3 (*fi 6*) (either term, 3-0-0). A study of selected philosophical and methodological problems in the human sciences. Consideration may be given to entire movements such as positivism or critical theory as well as to specific concepts they employ such as ideology, value neutrality, methodological individualism, class and utopia. Authors covered may include such figures as Weber, Habermas, Popper, and Winch.

S PHIL 325 Risk, Choice, and Rationality

★3 (*fi 6*) (either term, 3-0-0). A study of the formal theory of rationality including probability and induction, and elementary decision theory, with attention to the paradoxes of choice.

S PHIL 331 Introduction to Asian Philosophy

★3 (*fi 6*) (either term, 3-0-0). An introduction to one or more systems of philosophy arising in Asia: Buddhism, Daoism, Confucianism, Shintoism, Hinduism, Jainism, or one of the Hindu schools, etc. Note: Not open to students with credit in PHIL 293.

S PHIL 332 Feminist Issues in Political and Social Philosophy

★3 (*fi 6*) (either term, 3-0-0). An introduction to feminist issues in current social and political philosophy. Comparison and evaluation of various schools of current feminist thought such as liberal feminism, radical feminism, Marxist feminism, and socialist feminism. Note: Not open to students with credit in PHIL 274.

S PHIL 336 Early Medieval Philosophy

★3 (*fi 6*) (either term, 3-0-0). Major philosophers in the Christian and Islamic traditions up to the reintroduction of Aristotelian texts in the early 12th century. Prerequisite: PHIL 230 or consent of Department.

S PHIL 355 Philosophy of the Environment

★3 (*fi 6*) (either term, 3-0-0). Designed to bring traditional and contemporary philosophical theories and methods to bear on issues raised by our relationship to the environment. The ethical, aesthetic, or metaphysical ramifications of certain major environmental problems, such as pollution, overpopulation, or resource exhaustion will be considered. Note: Not open to students with credit in PHIL 266.

S PHIL 357 Philosophy of Religion

★3 (*fi 6*) (either term, 3-0-0). General topics in the Philosophy of Religion, which may include the concept of 'religion,' the existence of God, meaning and intelligibility in religious language, religion and morality, implications of the social scientific study of religion. Note: Not open to students with credit in PHIL 290.

S PHIL 365 Cyberphilosophy

★3 (*fi 6*) (either term, 2-0-1). An introduction to philosophical reflection on computers, computing, and the changes being wrought by the computer revolution. This course has a laboratory component. No previous familiarity with computing is presupposed.

S PHIL 368 Equality and Social Justice

★3 (*fi 6*) (either term, 3-0-0). A philosophical study of the notions of equality, privilege, and freedom. Readings from classical and contemporary texts on justice, equality, group identity and difference, oppression and liberation. Attention will be paid to areas of current controversy such as welfare policies, affirmative action, and the nature and implications of sexual, cultural, and ethnic identity.

S PHIL 375 Science and Society

★3 (*fi 6*) (either term, 3-0-0). A broadly based introduction to the intellectual, cultural, and social dimensions of science and their implications. Topics may include the impact of the Newtonian revolution, mechanism, materialism and Darwinism, and the nature of objectivity and rationality. Note: Not open to students with credit in PHIL 210.

S PHIL 380 Philosophy of Criticism

★3 (*fi 6*) (either term, 3-0-0). An introduction to the philosophical foundations

of art criticism. Questions concerning the standards of interpretation and of evaluation of the arts will be given special attention.

S PHIL 382 Philosophy of Law: Social Issues

★3 (*fi 6*) (either term, 3-0-0). Philosophical problems arising at the interface between the legal system and wider social life: problems of legal liberty (harm as the limit of legal liberty, legal paternalism, legal moralism), the nature of legal liability/responsibility (the mental element in legal liability, the nature of causation in law), civil disobedience, punishment. Note: Not open to students with credit in PHIL 272.

S PHIL 385 Ethical Theory and Business

★3 (*fi 6*) (either term, 3-0-0). Topics include economic justice, social and environmental responsibility of corporations, conflict of interest and conflicts between rights and profits. Note: Not open to students with credit in PHIL 262.

S PHIL 386 Philosophy and Health Care

★3 (*fi 6*) (either term, 3-0-0). A philosophical examination of concepts and issues central to knowledge and practice of health care. Topics may include: rights and responsibilities of patients and health care personnel, passive and active euthanasia, abortion, research and experimentation, disclosure of diagnosis and risks, death and suffering. Note: Not open to students with credit in PHIL 264.

S PHIL 387 Professional Ethics

★3 (*fi 6*) (either term, 3-0-0). Introduction to ethical thinking in a professional context. Ethical issues in common to different professions are examined in relation to ethical theory. Topics may include professionalism itself, honesty and consent, privacy and confidentiality, social responsibility, and professional ethical codes. Note: Not open to students with credit in PHIL 260.

S PHIL 392 Topics in Recent Continental Philosophy

★3 (*fi 6*) (either term, 3-0-0). An introduction to such movements in recent European Philosophy as phenomenology, hermeneutics, critical theory, structuralism, and post structuralism. Prerequisite: PHIL 291 or consent of the Department.

PHIL 396 Third-Year Honors Seminar

★3 (*fi 6*) (either term, 0-3s-0). Note: For students in the third year of the Honors program.

D PHIL 400 Topics in Metaphysics

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: One of PHIL 200, 301, or consent of Department.

D PHIL 401 Topics in Epistemology

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: PHIL 301 or consent of Department.

D PHIL 405 Topics in Philosophy of Mind

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: PHIL 305 or consent of Department.

D PHIL 411 Philosophy of Space and Time

★3 (*fi 6*) (either term, 3-0-0). Selected theories and problems concerning the nature of space and time. A strong background in philosophy, mathematics, or physical sciences is desirable. Prerequisite: consent of Department.

D PHIL 414 Topics in Philosophy of Physics

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: PHIL 310 or consent of Department.

D PHIL 417 Philosophy and Cognitive Science

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: At least ★6 in Philosophy, ★3 of which must be at the 200-level or consent of Department.

D PHIL 420 Metalogic

★3 (*fi 6*) (either term, 3-0-0). The theoretical study of formal systems of logic. Topics include formal axiomatic systems, formal syntax and semantics, soundness and completeness proofs for both sentential and predicate logic. Prerequisite: PHIL 220 or consent of Department.

D PHIL 421 Modal Logic

★3 (*fi 6*) (either term, 3-0-0). Standard modal systems in sentential and predicate logic including possible world semantics and completeness proofs. Tense logic and epistemic logic may be considered. Prerequisite: PHIL 320 or consent of Department.

D PHIL 428 Logic and Language

★3 (*fi 6*) (either term, 3-0-0). Philosophical logic and its application to the semantics of natural language. Prerequisite: At least ★6 in Philosophy, ★3 of which must be at the 200-level or consent of Department.

D PHIL 430 Topics in Ancient Philosophy

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: PHIL 330 or consent of Department.

D PHIL 434 Aristotle

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: PHIL 330 or consent of Department.

D PHIL 436 Topics in Later Medieval Philosophy

★3 (*fi 6*) (either term, 3-0-0). Scholastic philosophy in medieval western Europe from the mid-12th century to 1350, including relevant developments in later Islamic thought. Prerequisite: One of PHIL 330, 336, or consent of Department.

D PHIL 442 17th- and 18th-Century Continental Philosophy

★3 (*fi 6*) (either term, 3-0-0). Topics concerning the early modern philosophical tradition of Descartes, Spinoza, and Leibniz. Prerequisite: At least ★6 in Philosophy, ★3 of which must be at the 200-level or consent of Department.

D PHIL 444 Kant

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: At least ★6 in Philosophy, ★3 of which must be at the 200-level or consent of Department.

D PHIL 445 Topics in 19th-Century Philosophy

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: At least ★6 in Philosophy, ★3 of which must be at the 200-level or consent of Department.

D PHIL 447 Wittgenstein

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: At least ★6 in Philosophy, ★3 of which must be at the 200-level or consent of Department.

D PHIL 448 Topics in 20th-Century Philosophy

★3 (*fi 6*) (either term 3-0-0). Prerequisite: At least ★6 in Philosophy, ★3 of which must be at the 200-level or consent of Department.

D PHIL 450 Topics in Ethics

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: One of PHIL 250, 350, 370 or consent of Department.

D PHIL 453 Philosophy of History

★3 (*fi 6*) (either term, 3-0-0). Study of one or more of the following themes: Speculative accounts of our historical being and of the sense of history as a whole; critical analysis of the scope and limits of historiographic knowledge and explanation; historicist theses that philosophy is essentially historical. Prerequisite: At least ★6 in Philosophy, ★3 of which must be at the 200-level, or consent of Department. Formerly PHIL 395.

D PHIL 465 Philosophy and Technology

★3 (*fi 6*) (either term, 3-0-0). A consideration of some of the main issues and themes current in the philosophy of technology, which may include the impact of technology and technological thinking upon society, the relationship of technology to science, a phenomenology of instrumentality, or the status of instrumental reasoning. Prerequisite: consent of Department.

D PHIL 470 Topics in Social and Political Philosophy

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: At least ★6 in Philosophy, ★3 of which must be at the 200-level or consent of Department.

D PHIL 473 Philosophy of Law: Theoretical Issues

★3 (*fi 6*) (either term, 3-0-0). Theoretical problems in the analysis of law and the legal system: legal positivism, legal realism, natural law theory, and nature of legal reasoning, the nature of legal rights. Prerequisite: At least ★6 in Philosophy, ★3 of which must be at the 200-level or consent of Department. Note: Not open to students with credit in PHIL 372.

D PHIL 480 Topics in Aesthetics

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: One of PHIL 280, 282, 380 or consent of Department.

D PHIL 484 Philosophy of Literature

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: At least ★6 in Philosophy, ★3 of which must be at the 200-level or consent of Department.

PHIL 486 Directed Reading I

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: consent of Department.

PHIL 487 Directed Reading II

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: consent of Department.

D PHIL 488 Current Research in Philosophy

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: At least ★6 in Philosophy, ★3 of which must be at the 200-level or consent of Department.

D PHIL 489 Current Issues in Philosophy

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: At least ★6 in Philosophy, ★3 of which must be at the 200-level or consent of Department.

PHIL 496 Honors Tutorial I

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: Open only to final year Honors students.

PHIL 497 Honors Tutorial II

★3 (*fi 6*) (either term, 3-0-0). Prerequisite: consent of Department.

211.186.2 Philosophy (from within the Roman Catholic tradition) St Joseph's College

Note: The following courses are offered by St Joseph's College and can be used as Arts options.

S PHIL 139 An Introduction to Christian Philosophy

★3 (fi 6) (either term, 3-0-0). A study of early Christian thinkers' use of Greek philosophy, especially St Augustine's adaptation of Platonism and St Thomas Aquinas' adaptation of Aristotle. Note: Not available for credit with PHIL 239 or 249. Formerly PHIL 117 or 217.

S PHIL 199 Current Questions in Christian Philosophy

★3 (fi 6) (either term, 3-0-0). A philosophical analysis from a Christian point of view of some recent philosophical positions. The main problems to be looked into will concern God, soul, truth, and goodness. Formerly PHIL 118 or 218.

S PHIL 209 Philosophy of Human Beings

★3 (fi 6) (either term, 3-0-0). A study of human beings: their organic existence, their knowledge, their intellectual and emotional love. Formerly PHIL 302.

S PHIL 239 Foundations of Christian Philosophy

★3 (fi 6) (either term, 3-0-0). A study of Greek philosophy and Hebrew culture, with development of themes concerning human beings, human knowledge, nature and ethics in the general thrust of Christian philosophy. Note: Not available for credit with PHIL 139. Formerly PHIL 200 or 300.

S PHIL 249 Development of Christian Philosophy

★3 (fi 6) (either term, 3-0-0). A study of the thought of the medieval Christian thinkers, especially Augustine and Thomas Aquinas. Note: Not available for credit with PHIL 139. Formerly PHIL 201 or 301.

S PHIL 259 Ethics in Christianity

★3 (fi 6) (either term, 3-0-0). A philosophic analysis of the roots of contemporary ethics in the Christian tradition. Formerly PHIL 305.

S PHIL 279 Human Beings in Society

★3 (fi 6) (either term, 3-0-0). A philosophical study of human beings in association with others, dealing with such aspects as the nature of the State, authority, law, rights, duty, community. Formerly PHIL 303.

S PHIL 289 Issues in the Philosophy of Christian Education

★3 (fi 6) (either term, 3-0-0). A philosophical study of the principles and aims of Christian education. Topics will include: educating the whole person, religious beliefs and values, religious pluralism, tolerance, the Christian and Catholic educational tradition, separate schools.

S PHIL 349 Philosophy of Being

★3 (fi 6) (either term, 3-0-0). The metaphysics of Thomas Aquinas; being, one, true, good, and beauty. Also modern developments and criticisms of metaphysics. Prerequisite: One of PHIL 139, 140, 239, 330, or consent of the College. Formerly PHIL 304.

S PHIL 399 Christian Existentialism

★3 (fi 6) (either term, 3-0-0). The philosophical foundations of contemporary Christian thought as seen in such authors as Kierkegaard, Marcel and Mounier. Prerequisite: One of PHIL 139, 140, 199, or consent of the College. Formerly PHIL 306.

S PHIL 439 Augustine

★3 (fi 6) (either term, 3-0-0). A study of the Christian Platonism of St Augustine. Prerequisite: One of 130, 139, 239, 432 or consent of the College. Formerly PHIL 401.

S PHIL 449 Thomas Aquinas

★3 (fi 6) (either term, 3-0-0). A study of certain philosophical issues based on the reading of some texts. Prerequisite: One of PHIL 139, 239, 249, 330, 434, or consent of Department or College. Formerly PHIL 403.

Note: For Christian Theology courses offered by St Joseph's College, see Christian Theology, St Joseph's College (from within the Roman Catholic Tradition).

211.186.3 Graduate Courses

Note: Only a selection of the courses listed below are offered each year.

The following table lists renumbered courses effective 1991/92:

Old	New	Old	New
PHIL 502	PHIL 530	PHIL 526	PHIL 580
PHIL 504	PHIL 532	PHIL 545	PHIL 500
PHIL 505	PHIL 534	PHIL 563	PHIL 501
PHIL 506	PHIL 536	PHIL 564	PHIL 510
PHIL 508	PHIL 542	PHIL 568	PHIL 505
PHIL 509	PHIL 543	PHIL 570	PHIL 526/572
PHIL 511	PHIL 546	PHIL 581	PHIL 596
PHIL 519	PHIL 594	PHIL 582	PHIL 597
PHIL 522	PHIL 550	PHIL 676	PHIL 696
PHIL 524	PHIL 570	PHIL 677	PHIL 697

PHIL 500 Metaphysics

★3 (fi 6) (either term, 3-0-0).

PHIL 501 Epistemology

★3 (fi 6) (either term, 3-0-0).

PHIL 505 Philosophy of Mind

★3 (fi 6) (either term, 3-0-0).

PHIL 510 Philosophy of Science

★3 (fi 6) (either term, 3-0-0).

PHIL 526 Philosophy of Language

★3 (fi 6) (either term, 3-0-0).

PHIL 532 Aristotle

★3 (fi 6) (either term, 3-0-0) or ★6 (fi 12) (full session, 3-0-0).

PHIL 534 Topics in Greek Philosophy

★3 (fi 6) (either term, 3-0-0).

PHIL 536 Topics in Medieval Philosophy

★3 (fi 6) (either term, 3-0-0).

PHIL 543 Locke

★3 (fi 6) (either term, 3-0-0) or ★6 (fi 12) (full session, 3-0-0).

PHIL 546 Topics in Modern Philosophy

★3 (fi 6) (either term, 3-0-0).

PHIL 547 Topics in 20th Century Philosophy

★3 (fi 6) (either term, 3-0-0) or ★6 (fi 12) (full session, 3-0-0).

PHIL 550 Moral Philosophy

★3 (fi 6) (either term, 3-0-0).

PHIL 570 Social and Political Philosophy

★3 (fi 6) (either term, 3-0-0).

PHIL 572 Philosophy of Law

★3 (fi 6) (either term, 3-0-0).

PHIL 580 Aesthetics

★3 (fi 6) (either term, 3-0-0).

PHIL 594 Selected Problems in Philosophy

★3 (fi 6) (either term, 3-0-0).

PHIL 596 Directed Reading I

★3 (fi 6) (either term, 3-0-0). Prerequisite: Open only to graduate students beyond the qualifying year.

PHIL 597 Directed Reading II

★3 (fi 6) (either term, 3-0-0). Prerequisite: Open only to graduate students beyond the qualifying year.

PHIL 696 Directed Reading III

★3 (fi 6) (either term, 3-0-0) or ★6 (fi 12) (full session, 3-0-0). Prerequisite: Open only to provisional PhD candidates.

PHIL 697 Directed Reading IV

★3 (fi 6) (either term, 3-0-0) or ★6 (fi 12) (full session, 3-0-0). Prerequisite: Open only to provisional PhD candidates.

211.187 Physical Activity

Faculty of Physical Education and Recreation

Goal of PAC Level I:

- (1) Acquisition of basic skills required in the activity and an appreciation of how these skills are used in combination in performance situations.
- (2) Development of the specific theoretical knowledges associated with terminology, history, sociocultural context, rules and organizational aspects, basic strategies and tactics, technique, and other concepts relevant to the activity.

Notes

- (1) **Attendance Policy:** Students must be in attendance for the first two class sessions. If the student is not in attendance for both of the first two class sessions (without prior written approval), he/she will be deleted from the class list. See §142.8(1).
- (2) **Activity-course dress requirements for first class.** Students are expected to attend the first class of any activity course appropriately dressed for activity participation.
- (3) These courses may require the payment of additional miscellaneous fees. See §22.2.3 for details.

PAC 110 Aquatics

★1.5 (fi 3) (either term, 0-3L-0). Development of proficiency in swimming and aquatic skills and to the examination of theoretical aspects of aquatics. Prerequisite: Red Cross Level Blue or the ability to swim front crawl and back crawl efficiently. Credit may not be taken for both PAC 110 and PAC 100.

PAC 111 Basketball

★1.5 (fi 3) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in individual and team activities.

PAC 112 Field Hockey

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in individual and team activities.

PAC 113 Football

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in individual and team activities.

PAC 114 Ice Hockey

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in individual and team activities. Prerequisite: Average to above average skating ability. Students must provide their own equipment: Skates, sticks, hockey gloves, helmets, elbow and shin pads.

PAC 117 Rugby

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in individual and team activities. Mouth guards recommended.

PAC 118 Soccer

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in individual and team activities.

PAC 131 Badminton

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in basic badminton strokes and strategies. Students must supply own racquets and shuttlecocks.

PAC 133 Squash

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in basic squash strokes and strategies. Students must supply their own equipment: Racquets, balls, and eye guards.

PAC 135 Tennis

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in the basic tennis strokes (forehand, backhand, serve, and volley) and strategies. Students must provide their own equipment.

PAC 137 Volleyball

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in the fundamental skills of volleyball. Students will be taught in individual and small group settings.

PAC 140 Baseball/Fastball

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in individual and team activities.

PAC 145 Golf

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in driving, chipping, pitching and putting. This course requires the payment of additional miscellaneous fees. See §22.2.3 for details. Students must provide their own equipment.

PAC 154 Wrestling

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in takedowns and groundwork.

PAC 160 Gymnastics

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of personal skill in the fundamental movements common to all forms of gymnastics.

PAC 163 Figure Skating

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in edges, forward inside and outside figure eights, one foot spin, spirals, crossovers and jumps. Must provide own figure skates.

PAC 173 Athletics (Track and Field)

★1.5 (*fi 3*) (first term, 0-3L-0) and (Intersession). Acquisition of theoretical knowledge and personal skill in sprinting, hurdling, cross country running, long jumping, discus throwing, javelin throwing, and relays. Note: Students with credit in the old PAC 170 will not be granted credit for PAC 173 or 174.

PAC 174 Athletics (Track and Field)

★1.5 (*fi 3*) (second term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in sprinting, hurdling, middle distance running, triple jumping, high jumping, pole vaulting, shot putting, and relays. Note: Students with credit in the old PAC 170 will not be granted credit for PAC 173 or 174.

PAC 180 Canoeing and Kayaking

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in strokes, manoeuvres, and rescue. Equipment is available from the Campus Outdoor Centre. Prerequisite: Red Cross Blue Level or equivalent.

PAC 181 Cross Country Skiing

★1.5 (*fi 3*) (second term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in classical/skiing and hill manoeuvres. Note: one required day trip will be scheduled on a weekend during the course. Equipment is available from the Campus Outdoor Centre.

PAC 182 Indoor Wall Climbing

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge

and personal skill in basic climbing techniques, rope management, and belays. Equipment is available from the Campus Outdoor Centre.

PAC 199 Physical Activity - Level I

★1.5 (*fi 3*) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in an individual or team activity. Refer to the Registration Procedures Booklet for section number of specific activities.

PAC 303 Skin and Scuba Diving

★3 (*fi 6*) (Intersession, 3-0-1). This course examines the scientific principles of skin and scuba diving and their practical application to the sport of skin and scuba diving. Course may lead to scuba certification, but requires the completion of open water dives. Prerequisite: Red Cross Blue Level or equivalent swimming skill. It is essential students feel comfortable in the water.

PAC 310 Analysis and Instruction of Aquatics

★3 (*fi 6*) (either term, 3-0-0). This course examines practical and theoretical aspects and techniques related to instructing swimming and aquatic skills. Certification at the Instructor's level is optional provided students meet some extracurricular requirements. Prerequisite: PAC 110 or RLSS Bronze Medallion or the equivalent in swimming skill. Credit may not be taken for both PAC 310 and PAC 300 or 400.

PAC 311 Analysis and Instruction of Basketball

★3 (*fi 6*) (either term, 3-0-0). The theory, practice, and teaching of the fundamental skills of basketball. Prerequisite: PAC 111 or consent of Faculty.

PAC 313 Analysis and Instruction of Football

★3 (*fi 6*) (first term, 3-0-0). Development of individual skills as well as basic unit and team play. Coaching fundamentals and administrative skills are discussed. This course may be inclusive of the content of the NCCP (Football) Technical Levels I and II. Prerequisite: PAC 113 or consent of Faculty.

PAC 314 Analysis and Instruction of Ice Hockey

★3 (*fi 6*) (either term, 3-0-0). The theory, practice, and teaching of fundamental team play. Emphasis will be on the development of concepts and strategies from which effective systems are created. Students must provide their own equipment: Skates, stick, helmet, hockey gloves, elbow and shin pads. Prerequisite: PAC 114 or consent of Faculty.

PAC 318 Analysis and Instruction of Soccer

★3 (*fi 6*) (either term, 3-0-0). The theory, practice, and teaching of the fundamental skills of soccer. Emphasis on skill acquisitions and analysis. Prerequisite: PAC 118 or consent of Faculty.

PAC 320 Structure and Strategy of Games

★3 (*fi 6*) (either term, 1-2s-0). A study of similarities and differences in games (sports) through an examination of their specific rules, skills and strategies. Class members will be exposed to experiences at the practical and theoretical levels in the categories of territory, target, field and court games.

PAC 325 The Study of Games for Children

★3 (*fi 6*) (either term, 1-2s-0). A study in depth of the games played by children in informal situations and in organized programs. Opportunities to observe and work with children will be provided. Prerequisite: PEDS 292, 293, 338, or PAC 320. Formerly PAC 425.

PAC 331 Analysis and Instruction of Badminton

★3 (*fi 6*) (either term, 0-3L-0). Theory and practice of the skills and strategies of badminton. Students must provide their own racquets and shuttlecocks. Prerequisite: PAC 131 or consent of Faculty.

PAC 334 Analysis and Instruction of Squash

★3 (*fi 6*) (either term, 0-3L-0). The theory, practice, and teaching of the skills and strategies of squash. Students must provide their own racquets, balls, and eye guards. Prerequisite: PAC 134 or consent of Faculty.

PAC 335 Analysis and Instruction of Tennis

★3 (*fi 6*) (either term, 0-3L-0). Theory and practice of the skills and strategies of tennis. Students must provide their own racquets, balls, and proper shoes. Prerequisite: PAC 135 or consent of Faculty.

PAC 337 Analysis and Instruction of Volleyball

★3 (*fi 6*) (either term, 3-0-0). The theory, practice and teaching of the fundamental skills of volleyball. Emphasis will be on volleyball skill instruction, advanced personal skill acquisition and fundamental team systems. May lead to NCCP Level I Technical certification. Prerequisite: PAC 137.

PAC 345 Analysis and Instruction of Golf

★3 (*fi 6*) (first term, 3-0-0). The theory, practice, and teaching of the fundamental skills of golf. (For BPE students only.) Prerequisite: PAC 145 or consent of Department.

PAC 355 The Theory and Practice of Yoga

★3 (*fi 6*) (either term, 3-0-0). Emphasis on philosophy, scientific basis and unique yoga approach to fitness and stress management along with practice of yoga asanas.

PAC 360 Analysis and Instruction of Gymnastics

★3 (*fi 6*) (either term, 3-0-0). Provides theoretical and practical foundations common to recreational and competitive gymnastics. May lead to certification in Level I NCCP. Prerequisite: PAC 160 or consent of Faculty.

PAC 361 Analysis and Instruction of Educational Gymnastics

★3 (*fi 6*) (either term, 1-2s-0). Progressive educational gymnastics themes, based upon movement concepts, are developed at practical activity and theoretical levels. Course instruction reflects primarily problem solving and discovery techniques to allow individuals and small groups to select and develop themes appropriate for apparatus and floor work. Prerequisite: PAC 160 or consent of Faculty.

PAC 365 The Study of Gymnastics for Children

★3 (*fi 6*) (either term, 1-2s-0). A study of a variety of gymnastic programs from the perspective of their potential to meet the needs of children at various ages. Class members will be required to plan, present, and evaluate gymnastic activities for children. Prerequisite: PEDS 292, 293, 338, or PAC 361. Formerly PAC 465.

PAC 370 Analysis and Instruction of Track and Field Events

★3 (*fi 6*) (either term, 3-0-0). Sprinting, hurdles, long-jump, high jump, triple jump, pole vault, distance running, relays, shot, discus, hammer, javelin, and related strength training. Prerequisite: PAC 170.

PAC 380 Analysis, Instruction, and Leadership of Canoeing and Kayaking

★3 (*fi 6*) (Intercession, 0-2s-4). The theory and practice of canoeing and kayaking instruction and trip leadership appropriate for various populations. Opportunities may be given to attempt ARCA/Red Cross and CRCA certification. Equipment is available from the Campus Outdoor Centre. Prerequisite: PAC 180 or consent of Faculty.

PAC 381 Analysis, Instruction, and Leadership of Cross Country Skiing

★3 (*fi 6*) (second term, 0-2s-4). The theory and practice of nordic ski instruction and trip leadership including avalanche safety training. Opportunities may be given to attempt CANSI Ski Instructor and CSA Tour Leader certification. Note: A five-day required ski tour will normally be scheduled during Reading Week. Equipment is available from the Campus Outdoor Centre. Prerequisite: PAC 181 or consent of Faculty.

PAC 390 Applied Resistance Training

★3 (*fi 6*) (either term, 2-0-1). The scientific examination of resistance training as an applied training methodology for general conditioning and sport-specific enhancement. Emphasis on resistance training techniques, lifting mechanics, program design and implementation will be the core element. Supplementary topics include plyometric training, Olympic lifts, and selected population program modifications. Prerequisite: PEDS 200. Pre- or Corequisite: PEDS 335.

PAC 399 Physical Activity – Level II

★3 (*fi 6*) (either term, 3-0-0). The theory, practice and teaching of the fundamental skills of an individual or team activity. Prerequisite: consent of Faculty.

211.188 Physical Education and Sport

Faculty of Physical Education and Recreation

211.188.1 Undergraduate Courses

Note: See also INT D 405 for a course which is offered by more than one department or Faculty and which may be taken as an option or as a course in this discipline.

The following table lists renumbered courses effective 1995/96:

Old	New	Old	New
PESS 100	PEDS 100	PESS 309	PEDS 391
PESS 102	PEDS 102	PESS 310	PEDS 335
PESS 120	PEDS 240	PESS 314	PEDS 334
PESS 140	PERLS 207	PESS 330	PEDS 338
PESS 150	PEDS 105	PESS 350	PERLS 350
PESS 170	PEDS 202	PESS 352	PERLS 452
PESS 180	PEDS 205	PESS 360	PEDS 445
PESS 201	PEDS 206	PESS 382	PEDS 305
PESS 203	PEDS 203	PESS 385	PEDS 405
PESS 204	PERLS 104	PESS 394	PEDS 384
PESS 209	PEDS 309	PESS 402	PERLS 204
PESS 260	PEDS 345	PESS 403	PEDS 403
PESS 292	PEDS 292	PESS 407	PEDS 407
PESS 293	PEDS 293	PESS 409	PEDS 409
PESS 294	PEDS 294	PESS 420	PEDS 440
PESS 300	PEDS 200	PESS 490	PEDS 201
PESS 301	PEDS 306	PESS 492	PEDS 492
PESS 302	PEDS 302	PESS 493	PEDS 400

Old	New	Old	New
PESS 303	PEDS 303	PESS 494	PEDS 484
PESS 304	PERLS 304	PESS 495	PEDS 491
PESS 307	PEDS 307	PESS 497	PEDS 497
PESS 308	PEDS 390	PESS 499	PEDS 499

PEDS 100 Structural Anatomy

★3 (*fi 6*) (either term, 3-0-2). Introductory study of human anatomy. Students learn structural and functional components of selected systems of the human body. For BPE students only.

PEDS 102 Human Physiology

★6 (*fi 12*) (full session, 3-0-0; 3-0-1). Introduction to human physiology from the cellular to systemic level, with special emphasis on systems which adapt to exercise stress. For BPE students only.

PEDS 105 Introduction to the Administration of Sport and Physical Education Programs

★3 (*fi 6*) (either term, 3-0-1). This course provides students with the basic skills required to successfully administer a sport and/or physical education program. For BPE and BEd PE majors or consent of Faculty.

PEDS 200 Physiology of Exercise

★3 (*fi 6*) (either term, 3-0-2). An introduction to physiological adaptations to stress of exercise and training. Prerequisite: PEDS 102 or equivalent. For BPE students only.

PEDS 201 Applied Ethics in Physical Education and Sport

★3 (*fi 6*) (either term, 2-1s-0). A philosophical examination of ethical questions in the professional practice of physical education and sport.

PEDS 202 Leadership and Instruction in Physical Activity

★3 (*fi 6*) (either term, 2-0-2). An introduction to the theory and practice of leadership and instruction in physical activity settings. Instructional techniques are applied to a variety of activities and environments in order to enhance the development of instructional skills which can promote skill learning. For BPE students only.

PEDS 203 Skill Acquisition and Performance

★3 (*fi 6*) (either term, 3-0-0). The course is designed to examine the theory of skill acquisition and performance throughout the lifespan in typical sport and physical activity situation. For BPE students only.

PEDS 205 Introduction to Outdoor Environmental Education

★3 (*fi 6*) (either term, 3-0-3). A conceptual and experiential introduction to outdoor environmental education and leadership. In addition to weekly lecture and lab components, the course includes weekend commitments. This course requires the payment of additional miscellaneous fees. See §22.2.3 for details.

PEDS 206 Biomechanics

★3 (*fi 6*) (first term, 3-0-0). A systematic procedure for qualitative analysis of human motion is presented. Students proceed from the identification of mechanical principles governing motion through to the formation of deterministic models and observational strategies. A weekly one hour optional tutorial session will be scheduled. For BPE students only.

PEDS 240 Introduction to Sports Injuries

★3 (*fi 6*) (either term, 3-0-1.5). Analysis of practical and theoretical concepts of sports injury. Includes an overview of sports medicine, care and prevention of injuries, and safety in athletics and physical education. Prerequisite: PEDS 100 or equivalent.

PEDS 292 Introduction to the Movement Activities of Children Aged 0 - 8

★3 (*fi 6*) (either term, 0-3s-0). A study of free play and organized physical activities of young children in recreational, educational, and sports environments. Class members will engage in practical physical activity and the observation of children. This course is not open to students who have received credit for PEDS 293 or equivalent.

PEDS 293 Introduction to the Movement Activities of Children Aged 5 - 12

★3 (*fi 6*) (either term, 0-3s-0). A study of free play and organized physical activities of school age children in recreational, educational, and sport environments. Class members engage in practical physical activity and the observation of children. This course is not open to students who have received credit for PEDS 292 or equivalent.

PEDS 294 A Conceptual Approach to Physical Activity

★3 (*fi 6*) (either term, 1-2s-0). A study of the fundamental movement concepts that underlie the physical activities engaged in by youth of secondary school age. For BPE and BEd (Physical Education Majors/Minors only.)

PEDS 302 Motor Learning, Memory, and Control

★3 (*fi 6*) (either term, 3-0-0). An introduction to the processes involved in the learning, memory, and control of human movement; with application to teaching, coaching, and competitive games. Prerequisite: PEDS 203 or consent of Faculty.

PEDS 303 Psychology of Sport and Physical Activity

★3 (fi 6) (either term, 3-0-0). This course introduces the student to select psychological theory as it relates to sport and physical activity. Psychological constructs along with their theoretical perspectives will be viewed within a cognitive, emotional, and behavioral framework. An analytical approach is encouraged. Prerequisite: PSYCO 104 (for non-BPE students), BPE students must successfully complete the first two years of the BPE degree.

PEDS 305 Adventure Education Leadership

★3 (fi 6) (Intersession, 0-3s-3). Principles and practice of wilderness travel with an emphasis on personal group development through outdoor pursuits. Technical skill development in navigation, rock climbing, minimal impact travel, survival and rescue, and rescue. This course requires the payment of additional miscellaneous fees. See §22.2.3 for details. Prerequisite: PEDS 205.

PEDS 306 Quantitative Biomechanics of Physical Activity

★3 (fi 6) (either term, 3-0-2). Further application of the principles of mechanics to understanding, analyzing, and measuring human movement. Topics include linear and angular kinematics and kinetics, photo instrumentation, body segment parameters, the link segment model and work-energy relationships. Prerequisite: PEDS 206 or consent of Faculty.

PEDS 307 Physical Growth and Psychomotor Development

★3 (fi 6) (either term, 3-0-0). A study of the sequential changes in physical growth and motor development with emphasis on individual differences. For BPE students only.

PEDS 309 Measurement and Evaluation

★3 (fi 6) (either term, 3-0-0). A survey of methods and techniques for evaluating the nature of physical activity programs and participants. Emphasis on practical application of tests and measurement related to a variety of sport, community and institutional settings. For BPE students only. Students cannot receive credit for PEDS 309 if they received credit for either STAT 141 or PSYCO 211.

PEDS 330 Dimensions of Physical Activity Performance

★3 (fi 6) (either term, 3-0-0). This course introduces the integrated nature of physical activity performance with emphasis on the biological, psychological, and motor skill dimensions. Skills in observation, evaluation, prescription, and intervention will be introduced and developed through problem solving techniques.

PEDS 334 Body Composition and Physical Activity

★3 (fi 6) (either term, 3-0-0). Emphasis on assessment and evaluation of body composition. Other topics include the regulation of body composition, nutritional requirements for athletes, eating disorders, and obesity. Prerequisites: HE ED 110 and PEDS 102. For BPE students only.

PEDS 335 Advanced Conditioning Methodology

★3 (fi 6) (either term, 3-0-0). A survey of the theoretical bases of conditioning programs. The course emphasis is on the nature of physiological adaptation to selected training regimens and the factors which influence the adaptive process. Prerequisite: PEDS 200 or consent of Faculty.

PEDS 338 Physical Activity and Sport for Children

★3 (fi 6) (either term, 0-3s-0). This course focuses on the child from birth to twelve years of age in a wide range of physical activities in both free and structured environments. It will look at activities offered in home, recreational, educational and competitive environments. There will be emphasis on the developing capabilities of the child and the most appropriate types of activity for any age or stage of development. For BPE and BA (Recreation Administration) students only.

PEDS 345 Introduction to Coaching

★3 (fi 6) (either term, 3-0-0). This course introduces the student to a variety of coaching topics of both a theoretical and a practical nature. This course is inclusive of the content of the NCC Program (Theory Levels I and II).

PEDS 384 Educational Gerontology in Physical Activity, Fitness, and Sport

★3 (fi 6) (either term, 1.5-0-1.5). The study and practical application of the principles of educational gerontology. This course will involve students in the analysis and instruction of older adults in a variety of sport, fitness, and physical activity settings. Focus will be on the issues and challenges of instruction in two populations: (1) aged, frail adults and (2) elderly, athletic adults.

PEDS 390 Motor Development and Motor Learning

★3 (fi 6) (either term, 3-0-0). A study of those relationships between physical maturation and environmental factors which can influence the acquisition of motor skills. Not for BPE degree credit.

PEDS 391 Introduction to the Scientific Basis of Human Movement

★3 (fi 6) (either term, 3-0-0). Lecture course with an emphasis on introductory knowledge and practical implications of the structural and functional characteristics and capacities of the human body with respect to movement. Not for BPE degree credit. For BA (Recreational Administration) and BEd students only.

PEDS 400 Human Gross Anatomy

★3 (fi 6) (either term, 3-0-3). The course is designed to provide in-depth information on the structure of the human body. Lectures and laboratories will emphasize the anatomical relationship in the extremities and the trunk as they relate to human movement, athletic therapy, and fitness. Lectures are followed by dissections of the human body and prosection demonstrations. For BPE students only. Prerequisite: PEDS 100.

PEDS 403 The Application of Psychological Skills to Sport and Physical Activity

★3 (fi 6) (either term, 3-0-0). The direct application of select psychological skills to sport and physical activity. A strong emphasis is placed on how to apply psychological skills in a variety of settings. Prerequisite: PEDS 303 or consent of Faculty.

PEDS 405 Outdoor Environmental Leadership

★3 (fi 6) (either term, 3-0-3). Principles, methods, and supervised practice of outdoor environmental education, environmental philosophy, and issues investigation and action as relevant to those leading and/or participating in the natural environment. Prerequisite: PEDS 205.

PEDS 407 Philosophy of Physical Education and Sport

★3 (fi 6) (either term, 3-0-0). Emphasis on developing the ability to philosophically evaluate the conceptual issues encountered when physical education and sport are discussed. Prerequisite: PERLS 104. For BPE students only.

PEDS 409 Introduction to Research

★3 (fi 6) (either term, 3-0-0). An overview of research in physical education with emphasis on practical application of research techniques and designs. This course is intended for students who possess a minimal knowledge of statistics. Prerequisite: PEDS 309 or an introductory statistics course.

PEDS 440 Advanced Athletic Therapy Methods and Techniques

★3 (fi 6) (either term, 3-0-0). Recognition of the potentially serious injury. Advanced prevention, treatment, and sport-specific rehabilitative methods and techniques in athletic therapy. Prerequisites: PEDS 100 and PEDS 240, or consent of Faculty.

PEDS 444 Helping Skills and Strategies in Sport and Physical Activity

★3 (fi 6) (either term, 1.5-1.5s-0). This course will present the student with counselling theories and helping skills as they relate to a variety of populations in sport and physical activity settings. Time will be spent in the seminar format developing individual and group skills. Prerequisites: PEDS 303 or consent of Faculty. Prerequisite or Corequisite: PEDS 403.

PEDS 445 Applied Principles of Coaching

★3 (fi 6) (either term, 3-0-0). This course will provide students with knowledge of advanced coaching theory that can be effectively applied in select coaching settings. Prerequisite: PEDS 345 or NCC Program (Theory Level I and II).

PEDS 471 Physical Education for Developmental Disabilities

★3 (fi 6) (either term, 3-0-0). An in-depth review of characteristics of children with movement difficulties as well as persons with mental deficiency with implications for program planning and service delivery. Prerequisite: PERLS 207 and PERLS 370.

PEDS 472 Physical Education for Physical Disabilities

★3 (fi 6) (either term, 3-0-0). An in-depth review of characteristics of persons with physical disabilities with implications for program planning and service delivery. Prerequisites: PERLS 207 and PERLS 370.

PEDS 484 Physical Activity and the Aging Adult

★3 (fi 6) (either term, 3-0-0). An examination of the role of physical activity on the health and lifestyle of aging adults.

PEDS 490 Professional Practicum

★6 (fi 12) (variable, variable). A half-time Professional Practicum that may run for the full term for 20 hours per week, the Full session for 10 hours per week, or the equivalent time. Students must apply to the Practicum Supervisor. A limited number of placements are available. Restricted to Year 4 BPE students only.

PEDS 491 Professional Practicum

★12 (fi 24) (either term, 14 weeks). Fourteen weeks of professional experience in a full-time (approximately 35 - 40 hours per week) route-related placement. Students must apply to the Practicum Supervisor. A limited number of placements are available. Restricted to Year 4 BPE students only.

PEDS 492 Movement Education for Young Children

★3 (fi 6) (either term, 0-3s-0). A study of the functional aspects of movement involved in the activities of children from infancy to age eight. Included is an examination of play equipment and play spaces. Prerequisite: PEDS 292 or consent of Faculty.

PEDS 497 Selected Topics in Physical Education and Sport

★3 (fi 6) (variable, variable). A course offered on a topic of current

interest in physical education and sport. Refer to the Registration Procedures Book for information on specific sections. Prerequisite: consent of Faculty.

PEDS 499 Directed Studies

★3 (*fi 6*) (variable, variable). A course designed to meet the needs of individual students. Prerequisite: consent of Faculty.

211.188.2 Graduate Courses

PEDS 500 Seminar in Biomechanics

★3 (*fi 6*) (either term, 0-3s-0).

PEDS 510 Anthropometry and Physical Activity

★3 (*fi 6*) (either term, 1-2s-0). An examination of current research in anthropometry and body composition with special emphasis on obesity and weight control.

PEDS 511 Exercise Testing and Exercise Prescription

★3 (*fi 6*) (either term, 1-1s-2). The theory and practice of exercise tests, interpretation, and exercise prescription for selected populations.

PEDS 515 Exercise Physiology Laboratory Techniques

★3 (*fi 6*) (either term, 1-0-3). The study of theoretical and practical issues related to selected laboratory techniques.

PEDS 516 Muscular Strength and Endurance

★3 (*fi 6*) (either term, 0-3s-0). Study of muscle contraction with emphasis on underlying mechanisms for improved functioning of cardiac and skeletal muscles.

PEDS 520 Physical Growth and Development

★3 (*fi 6*) (first term, 0-3s-0). An examination of selected topics in physical growth and motor development from both a theoretical and applied perspective.

PEDS 530 Adapted Physical Activity

★3 (*fi 6*) (second term, 0-3s-0). Seminar on current theoretical, practical and research issues in adapted physical activity.

PEDS 540 The Psychology of Performance Enhancement in Sport and Physical Activity

★3 (*fi 6*) (either term, 0-3s-0). This seminar focuses on the role of psychology as it relates to performance enhancement in the areas of sport and physical activity. Performance constructs and skills along with mental skills training programs will be discussed and evaluated.

PEDS 550 The Administration of Amateur Sport: The Role of the Canadian State

★3 (*fi 6*) (either term, 0-3s-0). This course will examine the increasingly large and visible role played by the state in Canadian Sport.

PEDS 577 Sport and Ethics

★3 (*fi 6*) (either term, 0-3s-0). An examination of ethical problems in sport. Prerequisite: PESS 407 or 490 or consent of Department.

PEDS 580 The Nature of Scientific Inquiry in Physical Education and Sport Studies

★3 (*fi 6*) (first term, 0-3s-0). An introduction to the basic philosophy and nature of scientific inquiry as it applies to contemporary research.

PEDS 610 Seminar in Exercise Physiology

★3 (*fi 6*) (second term, 0-3s-0). Prerequisite: consent of Department.

PEDS 642 Advanced Seminar in the Psychology of Sport and Physical Activity

★3 (*fi 6*) (either term, 0-3s-0). An advanced study of the research and theories pertaining to a specialized topic area within the psychology of sport and physical activity.

211.189 Physical Education, Recreation and Leisure Studies

Faculty of Physical Education and Recreation

211.189.1 Undergraduate Courses

The following table lists numbered courses effective 1995/96:

Old	New	Old	New
PESS 140	PERLS 207	PESS 402	PERLS 204
PESS 204	PERLS 104	RLS 321	PERLS 204
PESS 304	PERLS 304	RLS 430	PERLS 350
PESS 350	PERLS 350	RLS 432	PERLS 207
PESS 352	PERLS 452	RLS 451	PERLS 452

PERLS 101 Developing Critical Thinking in Physical Education and Recreation

★3 (*fi 6*) (either term, 1.5-0-1.5). Introduction to the development of critical thinking and problem solving skills. Focus on acquisition, processing,

and communication of information. These competencies will be applied to content from biological, behavioral, and sociocultural domains of physical education and leisure. The course intends to empower students to be independent, responsible learners during their undergraduate program. For students in the Faculty of Physical Education and Recreation only.

PERLS 104 Introduction to Sociocultural Aspects of Leisure and Sport

★3 (*fi 6*) (either term, 3-0-0). The study of play, physical education, recreation, sport, and leisure as institutionalized ways in which society organizes and teaches attitudes and skills. Provides an introduction to the importance of sociocultural inquiry and the notion of being critical as an empowering process.

PERLS 204 Leisure and Sport in Canadian Society: Historical Perspectives

★3 (*fi 6*) (either term, 3-0-0). An examination of the significant changes which have occurred in leisure and sport, specifically over the last century and with particular reference to Canadian society. Prerequisite: PERLS 104, or RLS 100, or consent of Faculty.

PERLS 207 Physical Activity and Leisure for Special Populations

★3 (*fi 6*) (either term, 3-0-0). An introduction into the current trends in the theory and practice in physical education and recreation from special groups. The course includes a survey of special populations and their implications for service delivery.

PERLS 304 Sport and Leisure in Canadian Society: Sociological Perspectives

★3 (*fi 6*) (either term, 2-1s-0). What it means to bring a "sociological imagination" to the study of sport and leisure with particular reference to Canadian society. Prerequisites: PERLS 104 or RLS 100, and PERLS 204.

PERLS 350 Advanced Analysis of Sport and Leisure Organizations

★3 (*fi 6*) (either term, 3-0-0). Theoretical consideration for the organization and administration of physical education, sport, recreation, and leisure programs. Prerequisites: PEDS 105 or successful completion of Year 2 of the BA (Recreation Administration) degree program.

PERLS 370 Assessment and Service Delivery for Special Populations

★3 (*fi 6*) (either term, 3-0-0). An overview of basic qualitative and quantitative assessment principles and their use to deliver quality physical activity and recreation services for special needs populations. Prerequisites: PERLS 207; and PEDS 309 or SOC 210 (or equivalent).

PERLS 450 Process Management

★3 (*fi 6*) (either term, 3-0-0). This course will introduce students to some of the concepts associated with process management and how, through the use of strategies associated with these concepts, individuals can assist organizations toward their desired goals. Such human processes as communication; problem solving and decision making; creating, building and maintaining a group; intergroup relationships; initiating and managing change; and assessing performance will be considered. Prerequisite: PERLS 350.

PERLS 452 Leisure Facilities: Planning and Management

★3 (*fi 6*) (either term, 0-3L-0). An examination of the planning, design, and management processes associated with leisure facilities (inclusive of sport, recreation, and tourism facilities). Attention is focused on the provision of leisure opportunities of a predominantly intensive-use nature which tend to occur in an urban or near-urban setting. These facilities will be considered within the context of the communities in which they function. This course requires the payment of additional miscellaneous fees. See §22.2.3 for details.

211.189.1 Graduate Courses

PERLS 541 Social Cognitive Approaches to Health Promoting Behaviors

★3 (*fi 6*) (either term, 0-3s-0). This course will address social-cognitive theories as they relate to behavioral change in the broad areas of health-promoting-behaviors (HPBS) with particular emphasis on physical activity. The theories and models to be covered will include Stages of Change, Social-Cognitive and Self-efficacy, Reasoned Action and Planned behavior, Self-esteem (various), etc. The specific context areas and order of classes will be determined in consultation with the class members each term. Areas of common interest will be identified and used as the basis for classes and examples throughout the term. The course is appropriate for individuals interested in social psychological and social-cognitive influences on health promoting behaviors and sport performance.

PERLS 542 Social Science Perspectives of Physical Activity, Fitness, and Well-Being

★3 (*fi 6*) (either term, 0-3s-0). An examination of the antecedents and consequences of regular vigorous physical activity involvement. Although

a holistic interdisciplinary perspective will be adopted, emphasis will be placed upon social psychological models and methodologies. Attention will be given to a variety of approaches for fostering regular physical activity involvement, ranging from those with a specific individual focus (e.g. individual counselling interventions) to those with a general societal orientation (e.g. general mass media or public education interventions).

PERLS 544 Aging, Health and Active Living

★3 (*fi 6*) (either term, 0-3s-0). An exploration of the benefits and risks of late-life physical activity, as well as life course barriers and incentives to health promotion through active living. The course will examine theoretical explanations for sedentary leisure of older adults through a critical review of the interdisciplinary gerontological literature.

PERLS 551 Analysis of Sport and Leisure Organizations

★3 (*fi 6*) (either term, 0-3s-0). An examination of the role, structure and processes of voluntary sport and leisure organizations. Note: May not be taken for credit if credit has been granted for PESS 551 or RLS 500.

PERLS 552 Leadership and Organizational Development as Applied to Physical Education, Sport, Recreation, and Leisure Organizations

★3 (*fi 6*) (either term, 0-3s-0). The purpose of the course is to explore and analyze proven leadership practices and strategies in organizations and to relate this theoretical and practical material to physical education, sport, recreation and leisure organizations. The course is experiential and self-explorative as students are expected to assess past and present leadership experiences and identify possible future leadership practices.

PERLS 581 Social Research Applications to Leisure and Sport

★3 (*fi 6*) (first term, 0-3s-0). An examination of both quantitative and qualitative research methodologies as they apply to the sociocultural area of sport and physical education and to the general field of leisure studies.

PERLS 582 Graduate Seminar: A Seminar in Current Factors, Problems and Issues

★3 (*fi 6*) (either term, 0-3s-0).

PERLS 590 Research and Directed Studies I

★3 (*fi 6*) (first term, 0-3s-0).

PERLS 591 Research and Directed Studies II

★3 (*fi 6*) (second term, 0-3s-0).

PERLS 599 Directed Studies and Research

★3 (*fi 6*) (full session, 0-1.5s-0).

PERLS 690 Directed Studies and Research

★3 (*fi 6*) (first term, 0-3s-0).

PERLS 691 Directed Studies and Research

★3 (*fi 6*) (second term, 0-3s-0).

PERLS 699 Directed Studies and Research

★3 (*fi 6*) (full session, 0-1.5s-0).

PERLS 900 Directed Research Project

★6 (*fi 12*) (variable). A significant piece of scholarly writing. This course used by course-based Master's students.

211.190 Reserved

211.191 Physical Therapy

Department of Physical Therapy
Faculty of Rehabilitation Medicine

Note: All PTher courses are open to PT students only.

211.191.1 Undergraduate Courses

PTher 100 Professional Development I

★1 (*fi 2*) (first term, 1 week). Credit. Introduction to the physical therapy program and learning skills needed for university and the profession.

PTher 101 Professional Development II

★1 (*fi 2*) (first term, 2 days). Credit. Introduction to issues of professional practice and skills for effective writing and learning contract design.

PTher 201 Introduction to Clinical Practice

★1.5 (*fi 3*) (either term, 1 week). Credit. Introduction to clinical practice in approved clinical affiliations. Corequisites: REHAB 290, 295. Prerequisite: PTher 100.

PTher 300 Professional Development III

★1 (*fi 2*) (either term, 1-0-0). Credit. This course will address organizational aspects of physical therapy practice and ethical issues as they apply to physical therapy. Prerequisite: PTher 101.

PTher 310 Scientific Basis of Athletic Injuries

★3 (*fi 6*) (either term, 2-0-1). An introduction to the theory and assessment

of selected orthopaedic conditions which may be encountered by athletic therapists and physical educators (for senior BPE students). Prerequisites: PEDS 100 and 240.

PTher 311 Biomechanics in Physical Therapy

★3 (*fi 6*) (either term, 1.5-0-1.5). Dynamics and statics of human movement with application to physical therapy. Emphasis on integration of mechanical analysis with the practice of physical therapy. Prerequisites: REHAB 282, 283.

PTher 321 Electrophysical Agents I

★3 (*fi 6*) (either term, 3-0-2). Theory and practice of use and application of therapeutic heat, cold, light, ultrasound, and massage as used in physical therapy. Prerequisites: PTher 311, REHAB 283, 285, 290, 295, and PHYSL 161.

PTher 322 Electrophysical Agents II

★3 (*fi 6*) (either term, 3-0-2). Theory and practice of the use and application of therapeutic electric currents, basic electrophysiologic testing, and EMG biofeedback as used in physical therapy. Prerequisite: PTher 321.

PTher 371 Introduction to Paediatrics in Physical Therapy

★3 (*fi 6*) (either term, 3-0-1.5). The study of child development and application of physical therapy theory and research in paediatric neurology. Prerequisites: REHAB 285, 290, 295, 351, and PHYSL 161.

PTher 374 Neurological Physical Therapy I

★3 (*fi 6*) (either term, 3-0-2). An introduction to common problems seen in adult neurology, using Stroke as a representative model, and the study of the physical therapy theory and research related to the assessment and management of these problems spanning physical, psychosocial, cultural, and environmental domains. Prerequisites: PTher 371, REHAB 351, 353, and 354.

PTher 375 Neuromuscular Physical Therapy II

★3 (*fi 6*) (either term, 0-2s-2). A study of the physical therapy assessment and management of selected neurological conditions including critical appraisal of the related research in neuroscience and rehabilitation. Prerequisites: PTher 374, REHAB 353.

PTher 380 Cardiorespiratory Physical Therapy

★3 (*fi 6*) (either term, 3-0-2). An introductory study of the pathology and management of representative conditions affecting the cardiac and respiratory systems. Prerequisites: REHAB 352, 283, 285, 290, 295 and PHYSL 161.

PTher 384 Neuromusculoskeletal Disorders and Assessment

★4 (*fi 8*) (either term, 3-0-3). The study of conditions affecting the musculoskeletal and peripheral nervous systems encountered by physical therapists and methods of physical therapy assessment and diagnosis. Prerequisites: PTher 311, REHAB 283, 285, 290, 295, and PHYSL 161.

PTher 385 Mobilization of Peripheral and Spinal Joints

★3 (*fi 6*) (either term, 1-0-2). An introduction to the treatment of peripheral and vertebral joints using selected mobilization techniques. Prerequisites: PTher 384, 396.

PTher 387 Seminar in Therapeutics

★3 (*fi 6*) (either term, 0-2s-0). A seminar series designed to integrate therapeutic treatments in physical therapy, including a critical review of the clinical and research literature. Prerequisites: PTher 380, 333, 384, 396, 474, REHAB 463.

PTher 395 Therapeutic Exercise I

★3 (*fi 6*) (either term, 1-0-2). The role of therapeutic exercise in the management of neuromuscular and neuromusculoskeletal conditions. Corequisite: REHAB 352. Prerequisites: PTher 311, 384, and REHAB 351.

PTher 396 Therapeutic Exercise II

★3 (*fi 6*) (either term, 1-0-3). Principles of therapeutic exercise and their application to special populations, including theoretical basis of exercise as a therapeutic modality, exercise prescription, and evaluation of exercise effects. Prerequisites: PTher 395, REHAB 352.

PTher 421 Neuromuscular Clinical Practice

★3 (*fi 6*) (either term, 5 weeks). Credit. Clinical practice with clients with problems affecting the neuromuscular system. Prerequisite: PTher 420 or 374.

PTher 423 Cardiorespiratory Clinical Practice

★3 (*fi 6*) (either term, 5 weeks). Credit. Clinical practice with clients with problems affecting the cardiovascular and/or respiratory systems. Prerequisite: PTher 422.

PTher 426 Neuromusculoskeletal Clinical Practice

★3 (*fi 6*) (either term, or Intersession, 5 weeks). Credit. Clinical practice with clients with problems affecting the neuromusculoskeletal system. Prerequisites: PTher 424 and 425 or PTher 322, 384, and 395.

PTHER 428 Clinical Practice IV

★3 (*fi 6*) (either term, 5 weeks). Credit. Clinical practice in approved clinical affiliations.

PTHER 429 Clinical Practice V

★3 (*fi 6*) (Intersession, 5 weeks). Credit. Clinical practice in approved clinical affiliations.

PTHER 431 Clinical Practice VI

★4.5 (*fi 9*) (either term, 5 weeks). Credit. Clinical practice in approved clinical affiliations.

PTHER 433 Clinical Practice VII

★4.5 (*fi 9*) (either term, 5 weeks). Credit. Clinical practice in approved clinical affiliations.

PTHER 452 Selected Clinical Practice

★3 (*fi 6*) (full session, variable).

PTHER 464 Administration

★3 (*fi 6*) (either term, 3-0-0). Issues in the ethicolegal, social, organizational, and communication aspects of physical therapy practice.

PTHER 467 Individual Study

★3 (*fi 6*) (either term, 3-0-0). A course intended to allow the senior undergraduate student to pursue a topic of interest in more depth than the classroom structure permits. This may take the form of directed reading, laboratory work or clinical experience. Prerequisite: consent of Department.

PTHER 468 Sports Therapy

★3 (*fi 6*) (either term, 3-0-2). An introduction to the prevention and care of sports injuries including the adaptation of therapeutic exercise to the highly trained individual. Prerequisite: consent of Instructor.

PTHER 472 Paediatrics and the Physical Therapist

★3 (*fi 6*) (either term, 0-3L-0). Physical Therapy applied to the care of the paediatric patient in the home and in the institution.

PTHER 480 Respiratory Conditions

★3 (*fi 6*) (either term, 0-3L-0). An advanced course in the pathophysiology, assessment and treatment of patients with respiratory conditions.

PTHER 484 Assessment and Treatment of Joints

★3 (*fi 6*) (either term, 2-0-1). The assessment and treatment by manual techniques of peripheral and vertebral joints.

PTHER 486 Integrated Approach to Sensory Motor Treatment in Neurology

★3 (*fi 6*) (either term, 3-0-0). An integrated approach to the assessment and treatment of clinical problems in neurology based on theories and practice in the neurosciences in physical therapy. Prerequisite: PTH 420.

211.191.2 Graduate Courses**PTHER 505 Motor Control Mechanisms in Health and Disease**

★3 (*fi 6*) (either term, 2-1s-0). Introduction to the neural mechanisms of motor control and disturbances of these mechanisms in disease states. Emphasis will be placed on topics of clinical importance. Prerequisites: REHAB 353 (Neuroscience for Rehabilitation) or equivalent, and approval of the instructor and the student's advisor.

PTHER 506 Electromyographic Kinesiology

★3 (*fi 6*) (either term, 1-0-2). Seminar and laboratory sessions on advances in electromyography applied to physical therapy and allied areas.

PTHER 507 Instrumentation in Physical Therapy

★3 (*fi 6*) (either term, 2-0-2). A course on electronic fundamentals applied to measuring instruments and their basic components as used in physical therapy research.

PTHER 509 Tissue Biomechanics

★3 (*fi 6*) (either term, 1-2s-0). A consideration of the mechanical properties of biological tissue in normal and selected pathological conditions.

PTHER 510 Rehabilitation Ergonomics

★3 (*fi 6*) (either term, 1-2s-0). The application of ergonomic principles in rehabilitation.

PTHER 514 Readings in Rheumatology for Physical Therapists

★3 (*fi 6*) (either term, 0-3s-0). Reading course on selected issues in rheumatology for the graduate physical therapist.

PTHER 530 Research and Directed Studies

★3 (*fi 6*) (either term, 3-0-0). Work on a special project under the supervision of a faculty member. Prior approval of the instructor and the student's advisor required.

PTHER 531 Research and Directed Studies

★3 (*fi 6*) (either term, 3-0-0). Work on a special project under the supervision of a faculty member. Prior approval of the instructor and the student's advisor required.

PTHER 532 Research and Directed Studies

★3 (*fi 6*) (full session, 1.5-0-0). Work on a special project under the supervision of a faculty member. Prior approval of the instructor and the student's advisor required.

PTHER 533 Research and Directed Studies

★6 (*fi 12*) (full session, 3-0-0). Work on a special project under the supervision of a faculty member. Prior approval of the instructor and the student's advisor required.

PTHER 540 Practicum

★0 (*fi 3*) (either term). A practicum in the student's area of concentration and interest to be taken by the student if his/her committee feels the student needs, or the student desires, further practical experience. This course may involve experience off campus in any geographical area where the student may gain the necessary experience.

PTHER 550 Physiological Basis of Neuromuscular Disorders

★3 (*fi 6*) (either term, 2-1s-0). Cellular basis of clinically relevant perturbations to the neuromuscular system. Particular reference will be made to the efficacy of rehabilitative interventions.

PTHER 564 Recent Advances in Orthopaedics

★3 (*fi 6*) (either term, 0-3s-0). A seminar of recent advances in medical and surgical techniques in rheumatology and orthopaedics.

PTHER 568 Advanced Sports Therapy

★3 (*fi 6*) (either term, 0-3s-0). Seminar on advances in sports therapy and other related topics.

PTHER 570 Measurement and Evaluation in Physical Therapy

★3 (*fi 6*) (either term, 2-0-3). The principles involved in measurement and evaluation and their application in the practice of physical therapy.

211.192 Physics

Department of Physics
Faculty of Science

Notes

- (1) Credit may be obtained in only one of PHYS 101, 102, 103, 105, 108, 141, or EN PH 131.
- (2) Credit may be obtained in only one of PHYS 100, 109, or 130.
- (3) Students who have previously taken courses labelled PHYS 103, 104, 105, 106, 137, 141, or 143 should consult the Department of Physics regarding further Physics courses in their programs.
- (4) Credit may be obtained in only one of PHYS 201, 204, 230, 238, 281, or 285.
- (5) Credit may be obtained for only one of PHYS 200, 251, or 351.
- (6) Credit may be obtained for only one of PHYS 208 or 271.
- (7) Also see Astronomy and Geophysics listings for other courses offered by the Department of Physics.

211.192.1 Undergraduate Courses**PHYS 100 General Physics I**

★3 (*fi 6*) (first term, 3-0-3). The physics of oscillations and wave motion, application to sound and light waves; physics of fluids; geometrical optics and basic optical instruments; wave optics, uses of interferometry. Prerequisites: Physics 30, Mathematics 30. Credit may normally be obtained for only one of PHYS 100, 109, 130.

PHYS 101 General Physics II

★3 (*fi 6*) (second term, 3-0-3). Linear and rotational dynamics, work and energy, gravitation, momentum and collisions, rigid body rotation, statics, kinetic theory, heat, and thermodynamics. Prerequisite: PHYS 100. Credit may be obtained for only one of PHYS 101, 102, 103, 105, 108, 141, or EN PH 131.

PHYS 102 Mechanics

★3 (*fi 6*) (second term, 3-0-3). A calculus based mechanics course; vectors, kinematics, Newton's Laws, work, and energy; potential energy, conservation of energy; linear momentum, angular momentum, and conservation; moment of inertia, rigid body motion; simple harmonic motion; damped and driven oscillations; gravitation. Intended for BSc Honors and Specialization students. Prerequisites: MATH 113, 114, or 117 and PHYS 100. Credit may be obtained in only one of PHYS 101, 102, 103, 105, 108, 141, or EN PH 131.

PHYS 108 Introduction to University Physics I

★3 (*fi 6*) (first term, 3-1.5s-3). A non-calculus course for students without Physics 30. Vectors, forces in equilibrium, linear and rotational motion, dynamics of particles, oscillations. Prerequisite: Mathematics 30. This course is intended to be taken in sequence with PHYS 109. Not available to students with Physics 30 unless by prior written consent from the Department of Physics. Credit may be obtained for only one of PHYS 101, 102, 103, 105, 108, 141, or EN PH 131.