

AS/JP 4010 6.00 Classical Japanese. In this course, classical Japanese language is studied using a wide range of Japanese texts. Prerequisites: AS/JP 3000 6.00 or equivalent; permission of the department. Degree credit exclusion: AS/JP 4800B 6.00.

Language of Instruction: Japanese

AS/JP 4100 6.00 Teaching of Japanese as a Foreign/Second Language. This course offers comprehensive teacher education and training for the Japanese language. The main objective is to familiarize teachers with current theories, methodologies, and their practical applications developed in the relevant areas, with strong focus on the communicative approach, and computer assisted language learning and teaching. Prerequisites: AS/JP 4000 6.00 or equivalent (for non-native speakers of Japanese); TOEFL score: 580 or equivalent (for non-native speakers of English); BA or BA expected within a year (may be waived at the instructor's discretion); teaching experience preferred; AS/LING 3230 3.00 strongly recommended.

Language of Instruction: Japanese

AS/JP 4120 6.00 Translation: Japanese-English; English-Japanese. This course stresses translation practice from and into Japanese, dealing with texts taken from various fields and sources. The focus is on discourse organization, cross-cultural differences and stylistics. Prerequisites: AS/JP 4000 6.00, or equivalent, or AS/JP 3000 6.00, with permission of the instructor; permission of the department. Degree credit exclusion: AS/JP 4800A 6.00. Note: This course requires Internet access.

Language of Instruction: Japanese

Kinesiology and Health Science – Arts, Pure and Applied Science

Undergraduate Office:

333 Norman Bethune College, 416-736-5807

Sport and Recreation Office:

317 Tait McKenzie Centre, 416-736-5982

Web Address:

<http://www.kinesiology.yorku.ca>

Chair of the School:

334 Norman Bethune College, 416-736-5403

Undergraduate Office:

333 Norman Bethune College, 416-736-5807

Chair of the School:

R. Kelton

Director of Sport and Recreation:

P. Murray

Professors:

E. Cafarelli, C. Davis, B. Fowler, N. Gledhill, D. Hood

Professors Emeriti:

T. Bompá, D. Chambers, F. Cosentino, S.G. Robbins

Associate Professors:

T. Duck, R. Kelton, P. Ritvo, V.E. Wilson

Associate Professors Emeriti:

K. Jones, M. van der Merwe

Assistant Professors:

J. Eisenmann, F. Flint, L. Gagliese, T.L. Haas, P. Keir, G. Malszecki, A. Moore, M. Riddell, L. Sergio, R. Staines, S. Vail

Senior Lecturers:

R. Bain, M. Mosher, T. Zivic

Associate Lecturers:

N. Bajin, T. Bompá, W. Dyba, P. Murray, N. Smith, E. Willis, C. Wilson

Sessional Instructors:

E. Bojesin, V. Jamnik, B. Pangos

The School of Kinesiology and Health Science has a curriculum which presents wide and flexible offerings to the student. All students take a core of required subject matter encompassing the major areas of emphasis in kinesiology and health science. Students may choose from a variety of elective courses to develop a highly specialized area of interest or to obtain a more general and broad program. The School attaches laboratories, field work and seminars to many of its courses, thereby coupling theory and

technical knowledge with applied experiences and providing students with a greater opportunity for exchange and discussion with each other, with teachers and with experts in the area. The School also has grouped courses, enabling students to obtain certification in the areas of athletic therapy, sport administration, coaching and fitness assessment and exercise counselling.

A physical activity skills "practicum" program is an integral part of the Undergraduate Program in Kinesiology and Health Science. Students take at least two practicum credits in each of gymnastics/dance, aquatics, team sports, individual sports, track and field, and emergency care, and complete their requirements from the large variety of practicum courses offered.

For specific Honours BA program requirements please consult the Faculty of Arts Programs of Study section of this Calendar. For specific Honours BSc program requirements please consult the Faculty of Pure and Applied Science Programs of Study section of this Calendar.

Courses in Kinesiology and Health Science

Academic courses in kinesiology and health science offered by the School of Kinesiology and Health Science have the prefix "KINE". Practicum courses have the prefix "PKIN".

AS/SC/KINE 1000 4.00 Sociocultural Perspectives in Kinesiology.

This course examines the historical, philosophical and socio-cultural factors critical in the development of kinesiology and health science. Body concepts and human movement issues are explored. Critical skills (analysis, research, writing), academic and career planning are included. One and one-half lecture hours per week, plus one hour tutorial in alternate weeks. Two terms. Degree credit exclusions: AS/SC/KINE 1000 3.00, AS/SC/KINE 2010 3.00, AS/SC/PHED 1000 3.00, AS/SC/PHED 1010 3.00, AS/SC/PHED 2010 3.00.

Cross-listed to: AS/KINE 1000 4.00 and SC/KINE 1000 4.00

AS/SC/KINE 1020 5.00 Fitness Assessment and Training.

An analysis of the basic elements of fitness including their assessment and training. Topics such as athlete assessment, employee fitness programs, home fitness programs, private clubs, fitness assessment certification and government fitness programs are also covered. One and one-half lecture hours per week plus one lecture hour on applied techniques of calculation in alternate weeks, plus two laboratory hours in alternate weeks. Two terms. Degree credit exclusions: AS/SC/KINE 1020 3.00, AS/SC/KINE 1020 4.00, AS/SC/PHED 1020 3.00.

Cross-listed to: AS/KINE 1020 5.00 and SC/KINE 1020 5.00

AS/SC/KINE 2000 3.00 Psychology of Physical Activity. An overview of the theoretical frameworks and psychological principles related to physical activity, exercise and sport. Practical applications to individual and group performance enhancement are emphasized. Three lecture hours per week. One term. Prerequisite: AS/SC/PSYC 1010 6.00. Degree credit exclusions: AS/SC/KINE 3090 3.00, AS/SC/PHED 3090 3.00.

Cross-listed to: AS/KINE 2000 3.00 and SC/KINE 2000 3.00

AS/SC/KINE 2020 3.00 Introduction to Health. This course provides an introduction to factors that influence health status. Included are health definitions, health promotion, chronic diseases, disease prevention and basic epidemiological principles. Three lecture hours per week. One term. Degree credit exclusions: AS/SC/KINE 3080 3.00, AS/SC/PHED 3080 3.00.

Cross-listed to: AS/KINE 2020 3.00 and SC/KINE 2020 3.00

AS/SC/KINE 2031 3.00 Human Anatomy. An overview of the organization and structure of the human body. Each of the following systems is examined with respect to cell morphology, cell and tissue arrangement and inter-systems organization: skeletal, muscular, nervous, circulatory, lymphatic, respiratory, urinary, reproductive and endocrine. Three lecture hours per week, two laboratory hours in alternate weeks. One term. Degree credit exclusions: AS/SC/KINE 3070 3.00, AS/SC/PHED 2070 3.00, SC/PHED 2070 4.00, AS/PHED 3070 3.00, SC/PHED 3070 4.00, SC/NATS 1650 6.00.

Cross-listed to: AS/KINE 2031 3.00 and SC/KINE 2031 3.00

AS/SC/KINE 2049 3.00 Research Methods in Kinesiology. This course introduces students to the procedures utilized to design and conduct research in the discipline of kinesiology. Two lecture hours, two laboratory hours and one hour review/problem solving per week. One term. Degree credit exclusions: AS/SC/KINE 2049 4.00, AK/AS/SC/PSYC 2030 3.00, AK/PSYC 2530 3.00.

Cross-listed to: AS/KINE 2049 3.00 and SC/KINE 2049 3.00

AS/SC/KINE 2050 3.00 Analysis of Data in Kinesiology I. An introduction to scientific method and the statistical analysis of experimental data. The conduct of simple experiments, techniques of naturalistic observation and the analysis of resulting data using fundamental concepts of descriptive and inferential statistics. Two lecture hours and two laboratory hours per week. One term. Prerequisite: AS/SC/KINE 2049 4.00. Degree credit exclusions: SC/BIOL 2060 3.00, SC/BIOL 3090 3.00, AS/ECON 2500 3.00, ES/ENV 2010 6.00, ES/ENV 2010 3.00, AS/SC/GEOG 2420 3.00, AK/AS/SC/MATH 1131 3.00, AS/SC/MATH 1132 3.00, AK/AS/SC/MATH 2500 3.00, AK/AS/SC/MATH 2560 3.00, AS/SC/PHED 2050 3.00, AS/POLS 3300 6.00, AK/AS/SC/PSYC 2020 6.00, AK/AS/SC/PSYC 2021 3.00, AK/PSYC 2510 3.00, AS/SOCI 2030 6.00, AS/SOCI 3030 6.00.

Cross-listed to: AS/KINE 2050 3.00 and SC/KINE 2050 3.00

AS/KINE 2380 3.00 Introduction to Sport Administration. This course is designed to introduce students to the knowledge and skills needed to be successful in sport management. Topics include leadership styles, communication and change management skills, creative problem-solving and an introduction to event management and marketing. Three lecture hours per week. One term.

AS/SC/KINE 2475 3.00 Coaching: The Art and Science. This course introduces the fundamental principles involved in the coaching process. Background and philosophic issues related to the coach and the athlete are explored. Three lecture hours per week. One term. Note: Upon successful completion of this course, students receive Level I Theory certification of the National Coaching Certificate Program.

Cross-listed to: AS/KINE 2475 3.00 and SC/KINE 2475 3.00

AS/SC/KINE 2490 3.00 Athletic Therapy I. The purpose of the course is to provide students with a broad spectrum of knowledge relating to the physiological, psychosocial and pathological aspects of participation in sport with an emphasis on the management factors in injury prevention and remediation. Three lecture hours per week. One term. Prerequisite or corequisite: AS/SC/KINE 2031 3.00. Degree credit exclusion: AS/SC/PHED 2490 3.00.

Cross-listed to: AS/KINE 2490 3.00 and SC/KINE 2490 3.00

AS/SC/KINE 3011 3.00 Human Physiology I. The focus of this course is the cellular basis of human physiology. Basic principles of physiology are presented from the viewpoint of the simplest structural unit - the cell, in order to provide a sound basis for understanding complex multi-cellular organisms in subsequent courses. Three lecture hours per week. One term. Prerequisite: AS/SC/KINE 2031 3.00. Degree credit exclusions: AS/SC/KINE 3070 3.00, AS/SC/PHED 2070 3.00, SC/PHED 2070 4.00, AS/SC/PHED 3010 3.00, SC/PHED 3010 4.00, AS/PHED 3070 3.00, SC/PHED 3070 4.00.

Cross-listed to: AS/KINE 3011 3.00 and SC/KINE 3011 3.00

AS/SC/KINE 3012 3.00 Human Physiology II. The principles of homeostasis and physiological regulation are studied in relation to the cardiorespiratory, renal, locomotor, reproductive and digestive systems. Laboratory work is an essential part of the course. Three lecture hours per week, two laboratory hours in alternate weeks. One term. Prerequisite: AS/SC/KINE 3011 3.00. Introductory biology or life science is highly recommended. Degree credit exclusions: AS/SC/KINE 3070 3.00, AS/SC/PHED 2070 3.00, SC/PHED 2070 4.00, AS/SC/PHED 3010 3.00, SC/PHED 3010 4.00, AS/PHED 3070 3.00, SC/PHED 3070 4.00.

Cross-listed to: AS/KINE 3012 3.00 and SC/KINE 3012 3.00

AS/SC/KINE 3020 3.00 Skilled Performance and Motor Learning. An introduction to the analysis and development of skilled performance. Two lecture hours and two laboratory hours per week. One term. Prerequisites:

AS/SC/KINE 2050 3.00; AS/SC/PSYC 1010 6.00. Degree credit exclusion: AS/SC/PHED 3020 3.00.

Cross-listed to: AS/KINE 3020 3.00 and SC/KINE 3020 3.00

AS/SC/KINE 3030 3.00 Introduction to Biomechanical Analysis of Human Movement. Human movement is investigated with particular reference to the laws of physics (mechanics) and anatomical concepts as applied to joint motion and muscular action. Application of biomechanics to sports skills execution and laboratory exposure to contemporary analysis are included. Three lecture hours and one laboratory hour per week. One term. Prerequisite: AS/SC/KINE 2031 3.00. Degree credit exclusion: AS/SC/PHED 3030 3.00.

Cross-listed to: AS/KINE 3030 3.00 and SC/KINE 3030 3.00

AS/SC/KINE 3090 3.00 Psychology of Sport and Physical Activity. The theories and research of major topics in sport psychology are presented. Three lecture hours per week. One term. Prerequisites: AS/SC/KINE 2050 3.00; AS/SC/PSYC 1010 6.00. Degree credit exclusions: AS/SC/KINE 2000 3.00, AS/SC/PHED 3090 3.00.

Cross-listed to: AS/KINE 3090 3.00 and SC/KINE 3090 3.00

AS/SC/KINE 3150 3.00 Analysis of Data in Kinesiology II. This intermediate course in inferential statistics includes t-tests, multiple regression, ANOVA and selected non-parametric statistics. Practical applications to research in kinesiology and health science are emphasized. Three lecture hours per week. One term. Prerequisite: AS/SC/KINE 2050 3.00. Degree credit exclusions: SC/BIOL 2060 3.00, SC/BIOL 3090 3.00, AS/ECON 3500 3.00, ES/ENV 2010 6.00, AS/SC/GEOG 2420 3.00, AS/SC/MATH 1132 3.00, AK/AS/SC/MATH 2500 3.00, AK/AS/SC/MATH 2570 3.00, AS/POLS 3300 6.00, AK/AS/SC/PSYC 2020 6.00, AK/AS/SC/PSYC 2022 3.00, AK/PSYC 3110 3.00, AS/SOCI 3030 6.00.

Cross-listed to: AS/KINE 3150 3.00 and SC/KINE 3150 3.00

AS/KINE 3240 3.00 Behavioural Approach to Administration of Fitness and Sport. The focus of this course is on working with people. Students learn the theory and practice of team building, communication and counselling skills. Three lecture hours per week. One term. Degree credit exclusion: AS/PHED 2420 3.00.

AS/KINE 3250 3.00 Business Management in Sport, Fitness and Allied Health. An overview of the key business management practices in the sport, fitness and allied health fields. The main emphasis is the development of an understanding of the theory, practices and skills which are essential to effective management. Three lecture hours per week. One term. Prerequisites: AS/SC/KINE 1000 4.00; AS/SC/KINE 1020 4.00. Degree credit exclusions: AS/KINE 4430 3.00. Not open to students enrolled in the Fitness Assessment and Exercise Counselling Certificate or the Sport Administration Certificate.

AS/SC/KINE 3340 3.00 Growth, Maturation and Physical Activity. The major purpose of this course is to examine and discuss the literature and research studies in those aspects of physical growth and development that directly concern educators. Individual differences in growth and development are stressed throughout. Three lecture hours per week. One term. Degree credit exclusion: AS/SC/PHED 3340 3.00.

Cross-listed to: AS/KINE 3340 3.00 and SC/KINE 3340 3.00

AS/SC/KINE 3350 3.00 Physical Activity, Health and Aging. The course examines the aging process, lifestyle changes and the effect of physical activity on the health of aging adults. Three lecture hours per week. One term. Prerequisites: AS/SC/KINE 1020 4.00; AS/SC/KINE 2020 3.00. Note: Internet use is required for this course.

Cross-listed to: AS/KINE 3350 3.00 and SC/KINE 3350 3.00

AS/SC/KINE 3400 3.00 Fitness Consulting and Personal Fitness Training. This course provides detailed theoretical and practical instruction on physical activity/exercise prescription, management, supervision and intervention strategies with a focus on health-related fitness outcomes. Two lecture hours and two laboratory hours per week. One term. Prerequisites: AS/SC/KINE 1020 4.00; AS/SC/KINE 2031 3.00;

AS/SC/PKIN 7500 2.00; permission of the course director. Corequisite: AS/SC/KINE 3011 3.00.

Cross-listed to: AS/KINE 3400 3.00 and SC/KINE 3400 3.00

AS/KINE 3430 3.00 Sports in Canadian Life. An historical examination of sports in Canadian society, including their origin, introduction to North America and development in Canada up to the present. The influence of Canadian culture as a whole on the development of the selected sports is considered. Three lecture hours per week. One term. Degree credit exclusion: AS/PHED 3430 3.00.

AS/KINE 3440 3.00 Politics of the Olympic Games. A comparative analysis of recent developments and characteristics of physical education and sports in representative nations and world regions. The course covers objectives, methods, personnel and facilities in physical education and evaluation of selected national sports programs. Three lecture hours per week. One term. Degree credit exclusion: AS/PHED 3440 3.00.

AS/SC/KINE 3450 3.00 Athletic Injuries. An introductory examination of prevention, recognition and treatment of common athletic injuries. Follow-up remedial procedures and therapeutic modalities to enhance healing are also studied. Two lecture hours and two laboratory hours per week. One term. Prerequisite: AS/SC/KINE 2031 3.00. Degree credit exclusion: AS/SC/PHED 3450 3.00.

Cross-listed to: AS/KINE 3450 3.00 and SC/KINE 3450 3.00

AS/SC/KINE 3460 3.00 Regional Human Anatomy I. A comprehensive study of the structures of the human body. This course includes an examination of the upper limb, lower limb and back. Two lecture hours and two laboratory hours per week. One term. Prerequisite: AS/SC/KINE 2031 3.00. Degree credit exclusion: AS/SC/PHED 3460 3.00.

Cross-listed to: AS/KINE 3460 3.00 and SC/KINE 3460 3.00

AS/SC/KINE 3465 3.00 Regional Human Anatomy II. This course examines, in detail, the anatomical regions of the head, neck, back and thorax. Three lecture hours per week. One term. Prerequisite: AS/SC/KINE 2031 3.00. Degree credit exclusion: AS/SC/KINE 3050C 3.00.

Cross-listed to: AS/KINE 3465 3.00 and SC/KINE 3465 3.00

AS/SC/KINE 3480 3.00 Outdoor and Experiential Education. This course introduces fundamental principles and practices of outdoor and experiential education. Current theories, issues, trends and practices are discussed and the objectives of a range of outdoor programs are considered. Three lecture hours per week. One term. Degree credit exclusion: AS/SC/PHED 3480 3.00.

Cross-listed to: AS/KINE 3480 3.00 and SC/KINE 3480 3.00

AS/KINE 3490 3.00 Politics and Policy in the Sport Industry. Discussions about power, politics and ethics as they relate to current sport policy issues are explored. Policy development and policy analysis skills are learned and applied to issues in professional sport, amateur sport and university athletics. Three lecture hours per week. One term. Degree credit exclusion: AS/PHED 3490 3.00.

AS/KINE 3510 3.00 Sport Marketing and Event Management. The purpose of this course is to provide students with both the theory and practical skills required to organize and manage events. Additionally, students have the opportunity to learn from professionals working in this field. Three lecture hours per week. One term. Degree credit exclusion: AS/PHED 3510 3.00.

AS/SC/KINE 3570 3.00 Theory and Methodology of Training. The course provides an examination of the scientific and methodological theories, techniques and planning methods utilized in the training of the skilled athlete, with practical application to selected sports. Three lecture hours per week. One term. Prerequisites: AS/SC/KINE 1000 4.00; AS/SC/KINE 1020 4.00. Degree credit exclusion: AS/PHED 3570 3.00.

Cross-listed to: AS/KINE 3570 3.00 and SC/KINE 3570 3.00

AS/KINE 3580 3.00 Coaching: The Strategy and Tactics of Sport. This course investigates the conceptual basis of strategic and tactical planning for sports performance. An emphasis is placed on analyzing the

variety of sources that contribute to the conceptual framework a coach may use in formulating strategic and tactical plans. Three lecture hours per week. One term. Prerequisites or corequisites: AS/SC/KINE 2475 3.00.

AS/SC/KINE 3585 3.00 Clinical Placement in Athletic Therapy. This course provides students with the opportunity to gain practical experience in clinical situations within the profession of athletic therapy. Students integrate theory and practice in actual workplace situations by working directly with sports medicine specialists. Ten hours clinical placement per week, five one-and-a-half hour seminars. One term. Prerequisites: Open only to athletic therapy certificate students, with permission of the athletic therapy program coordinator.

Cross-listed to: AS/KINE 3585 3.00 and SC/KINE 3585 3.00

AS/SC/KINE 3600 3.00 Athletic Therapy II. This course provides students with a broad spectrum of knowledge relating to the physiological and pathological aspects of participation in sport with an emphasis on detection and human factors in injury prevention and remediation. Three lecture hours per week. One term. Prerequisite: AS/SC/KINE 2490 3.00. Degree credit exclusion: AS/SC/PHED 3600 3.00.

Cross-listed to: AS/KINE 3600 3.00 and SC/KINE 3600 3.00

AS/SC/KINE 3610 3.00 Coaching: Psychological and Sociological Aspects. The course focuses upon the application of principles of psychology to coaching. An examination of philosophy of coaching, legal liability, socialization and team dynamics is also undertaken with a view to establishing effective coaching methodology. Three lecture hours per week. One term. Prerequisites: AS/SC/KINE 2475 3.00; AS/SC/PSYC 1010 6.00. Degree credit exclusions: AS/SC/PHED 2470 6.00, AS/SC/PHED 3610 3.00.

Cross-listed to: AS/KINE 3610 3.00 and SC/KINE 3610 3.00

AS/KINE 3620 3.00 Sociology of Sport I. Sociological analysis of sport in contemporary society with particular emphasis on issues relating to children, gender and the Canadian scene. Three lecture hours per week. One term. Degree credit exclusions: AS/SC/PHED 3620 3.00, AS/SOCI 3670 3.00.

AS/KINE 3630 3.00 Race and Sport. The purpose of the course is to explore the concepts of race and its ideologies applied to sport, the unique conditions of minority athletes and historical transformations. Three lecture hours per week. One term. Prerequisite: AS/SC/KINE 1000 4.00 or AS/SC/KINE 2010 3.00.

AS/SC/KINE 3640 3.00 Epidemiology of Physical Activity, Fitness and Health. This course provides an in-depth assessment of the epidemiology of physical activity, fitness and health. General concepts of epidemiology are covered, as well as associations among activity, exercise, fitness and disease/risk factors. Three lecture hours per week. One term. Prerequisite: AS/SC/KINE 2020 3.00. Degree credit exclusion: AS/SC/KINE 3050B 3.00.

Cross-listed to: AS/KINE 3640 3.00 and SC/KINE 3640 3.00

AS/SC/KINE 3645 3.00 Physical Activity and Health Promotion. This course explores social marketing techniques and strategies in the promotion of physical activity and health from a public policy perspective. Exploring the scientific rationale and justification for workplace and community-based physical activity and lifestyle programs is emphasized. Three lecture hours per week. One term. Prerequisites: AS/SC/KINE 1020 4.00 and AS/SC/KINE 2020 3.00.

Cross-listed to: AS/KINE 3645 3.00 and SC/KINE 3645 3.00

4000-Level Courses

Note: Only students with Honours standing may register in 4000-level kinesiology and health science courses.

AS/SC/KINE 4010 3.00 Exercise Physiology. The study of the physiological mechanisms involved during physical activity. The course covers the physiological effects of exercise and training upon the neuromuscular, cardiovascular, respiratory and metabolic systems. Three lecture hours per week, two laboratory/tutorial hours in alternate weeks. One term. Prerequisites: AS/SC/KINE 3011 3.00; AS/SC/KINE 3012 3.00.

Cross-listed to: AS/KINE 4010 3.00 and SC/KINE 4010 3.00

AS/SC/KINE 4020 3.00 Human Nutrition I. Basic energy and regulatory nutrients are examined, followed by an applied nutrition section in weight control, eating disorders, sport nutrition, food as drugs and food safety. Metabolic interrelationships and health associations are applied throughout. Three lecture hours per week. One term. Prerequisite or corequisite: AS/SC/KINE 4010 3.00. Degree credit exclusion: AS/SC/KINE 4470 3.00 (if completed prior to Fall/Winter 2003-2004).

Cross-listed to: AS/KINE 4020 3.00 and SC/KINE 4020 3.00

AS/SC/KINE 4060 3.00 Independent Studies in Kinesiology and Health Science. Students undertake a research project under the supervision of a faculty member. This should include a library investigation, and may include laboratory and/or field investigations. A substantial paper, a poster presentation and an oral presentation are part of the course requirements. Prerequisite: Normally only available to students after completion of 84 credits. Note: See the Faculty of Arts section of the Undergraduate Programs Calendar for Faculty of Arts regulations on "Independent Reading Courses."

Cross-listed to: AS/KINE 4060 3.00 and SC/KINE 4060 3.00

AS/SC/KINE 4060 6.00 Independent Studies in Kinesiology and Health Science. Students undertake a research project under the supervision of a faculty member. This should include a library investigation, and may include laboratory and/or field investigations. A substantial paper, a poster presentation and an oral presentation are part of the course requirements. Prerequisite: Normally only available to students after completion of 84 credits. Note: See the Faculty of Arts section of the Undergraduate Programs Calendar for Faculty of Arts regulations on "Independent Reading Courses."

Cross-listed to: AS/KINE 4060 6.00 and SC/KINE 4060 6.00

AS/SC/KINE 4060N 3.00 Independent Studies in Kinesiology and Health Science. Students undertake a research project under the supervision of a faculty member. This should include a library investigation, and may include laboratory and/or field investigations. A substantial paper, a poster presentation and an oral presentation are part of the course requirements. Prerequisite: Normally only available to students after completion of 84 credits. Note: See the Faculty of Arts section of the Undergraduate Programs Calendar for Faculty of Arts regulations on "Independent Reading Courses."

Cross-listed to: AS/KINE 4060N 3.00 and SC/KINE 4060N 3.00

AS/KINE 4350 3.00 Women and Sport. This course examines the accelerating emergence of women and girls in sport traditionally organized as exclusive male domain. The dynamics between women's aspirations in competitive sport, and cultural/systemic barriers to equality, are studied. Three lecture/discussion hours per week. One term. Prerequisites: AS/SC/KINE 1000 4.00 or AS/SC/KINE 2010 3.00; AS/KINE 3650 3.00. Degree credit exclusion: AS/KINE 4350 6.00. Note: Internet use is required for this course.

AS/KINE 4360 3.00 Gender and Sport. This course examines sociohistorical links between gender and social power expressed in sporting contexts, normally considered a male domain. The resistance to such notions by women and girls challenges received values, practices and scholarship. Does any sport have a gender? Three lecture hours per week. One term. Prerequisite: AS/SC/KINE 1000 4.00 or AS/SC/KINE 2010 3.00. Degree credit exclusions: AS/KINE 3650 3.00, AS/KINE 4350 6.00, AS/PHED 4350 6.00.

AS/SC/KINE 4400 6.00 Advanced Fitness/Lifestyle Assessment and Counselling. Students receive supervised, practical experience in designing, administering and interpreting fitness assessments along with the follow-up exercise counselling for athletes and the general public. Two lecture hours and three laboratory hours per week. Two terms. Prerequisites: AS/SC/KINE 3400 3.00; permission of the course director. Open only to students in the Certificate in Fitness Assessment and Exercise Counselling. Prerequisite or corequisite: AS/SC/KINE 4010 3.00.

Cross-listed to: AS/KINE 4400 6.00 and SC/KINE 4400 6.00

AS/KINE 4420 3.00 Relaxation: Theory and Practice. This course focuses on an understanding of the physiological and psychological basis of relaxation as a self-management procedure and in the utilization of relaxation strategies in sport, health and physical activity. Three lecture hours per week. One term. Prerequisites: AS/SC/KINE 2031 3.00; AS/SC/KINE 3011 3.00; AS/SC/KINE 3012 3.00 or permission of the course director.

AS/SC/KINE 4421 3.00 Relaxation II: Research and Application. This course reviews the research and application of self-regulation strategies (relaxation, biofeedback, imagery, cognitive restructuring and attention control) for performance and health enhancement. Three lecture hours per week. One term. Prerequisite: AS/KINE 4420 3.00.

Cross-listed to: AS/KINE 4421 3.00 and SC/KINE 4421 3.00

AS/KINE 4430 3.00 Business Skills for Sport and Fitness Professionals. This course includes theory and detailed practical instruction about key management/organizational processes and their successful application to sport and fitness-related business initiatives. Three lecture hours per week. One term. Prerequisite: Students must be in the Sport Administration Certificate or the Fitness Assessment and Exercise Counselling Certificate. Degree credit exclusions: AS/KINE 3250 3.00, AS/PHED 4430 3.00.

AS/SC/KINE 4440 3.00 Advanced Exercise Physiology: Muscle. Advanced topics in exercise physiology and biochemistry, including energy metabolism, fatigue, skeletal muscle physiology, adaptations to exercise and training. Applications of exercise to disease states, animal laboratories, and discussions of original research articles in exercise physiology. Three class hours (lectures/laboratories/tutorials) per week. One term. Prerequisite: AS/SC/KINE 4010 3.00.

Cross-listed to: AS/KINE 4440 3.00 and SC/KINE 4440 3.00

AS/SC/KINE 4445 3.00 Physiological Basis of Fatigue. An in-depth examination of the physiological processes that limit muscular exercise. Topics include cellular and metabolic failure in sustained muscular contractions, central nervous system limitations, substrate depletion and product accumulation, body fluid shifts and adaptations that forestall fatigue. Three lecture hours per week. One term. Prerequisites: AS/SC/KINE 3011 3.00; AS/SC/KINE 3012 3.00; AS/SC/KINE 4010 3.00.

Cross-listed to: AS/KINE 4445 3.00 and SC/KINE 4445 3.00

AS/SC/KINE 4448 3.00 Advanced Human Physiology: Endocrinology. An overview of human endocrinology at the physiological, biochemical and molecular levels, with an emphasis on health, disease, exercise and adaptation. Three hours per week. One term. Prerequisite: AS/SC/KINE 4010 3.00. Degree credit exclusions: SC/BIOL 4320 3.00, SC/KINE 4410 3.00.

Cross-listed to: AS/KINE 4448 3.00 and SC/KINE 4448 3.00

AS/SC/KINE 4450 3.00 Advanced Exercise Physiology: Cardiovascular. An overview of the cardiovascular physiology of exercise at both the central (heart) and peripheral (blood vessels, capillaries) levels, with an emphasis on health, disease, exercise and adaptation. Physiology adaptations at the molecular level are emphasized. Two lecture hours and two lab hours per week. One term. Prerequisite: AS/SC/KINE 4010 3.00.

Cross-listed to: AS/KINE 4450 3.00 and SC/KINE 4450 3.00

AS/SC/KINE 4451 3.00 Advanced Biomechanical Analysis of Human Movement (Part I - Kinematics). An examination of human motion, including the fundamentals of motion description, mechanics, and investigative techniques in biomechanics with an emphasis on the kinematics of movement. Special topics and problems relevant to students' interests are covered in seminars and small group laboratory sessions. Two lecture hours per week, plus laboratory hours. One term. Prerequisite: AS/SC/KINE 3030 3.00.

Cross-listed to: AS/KINE 4451 3.00 and SC/KINE 4451 3.00

AS/SC/KINE 4455 3.00 Biomechanics and Motor Control Laboratory. This course focuses on the theory and practice of methods for analyzing the mechanics and control of movement. Methods include collection and

analysis of biological signals such as electromyography and evoked potentials, as well as techniques for both kinematic and kinetic analysis of movement. Two lecture hours and two lab hours per week. One term. Prerequisites: AS/SC/KINE 3020 3.00, AS/SC/KINE 3030 3.00.

Cross-listed to: AS/KINE 4455 3.00 and SC/KINE 4455 3.00

AS/SC/KINE 4460 3.00 Occupational Biomechanics. (formerly AS/SC/KINE 4050A 3.00 - before 1999-2000) Use of biomechanics in the occupational setting is introduced. Topics include workplace assessment techniques, injury mechanisms, tissue mechanics and the (re)design of tools and workplace. Specific disorders and issues involving the upper extremity and lower back are addressed. Three lecture hours per week. One term. Prerequisite: AS/SC/KINE 3030 3.00. Degree credit exclusion: AS/SC/KINE 4050A 3.00.

Cross-listed to: AS/KINE 4460 3.00 and SC/KINE 4460 3.00

AS/SC/KINE 4470 3.00 Muscle and Joint Biomechanics. Quantitative biomechanical principles are used to evaluate the production of human motion at the joint and muscle level. Factors affecting total joint moment of force are studied including muscle mechanics, muscle architecture, moment arm and electrophysiology. Two lecture hours and two laboratory hours per week. One term. Prerequisite: AS/SC/KINE 3030 3.00. Degree credit exclusions: AS/SC/KINE 3050E 3.00 (Fall/Winter 2000-2001), AS/SC/KINE 3470 3.00.

Cross-listed to: AS/KINE 4470 3.00 and SC/KINE 4470 3.00

AS/SC/KINE 4475 3.00 Clinical Biomechanics. Quantitative biomechanical techniques are used to evaluate musculoskeletal injuries and pathological movement. Standard biomechanics techniques and modeling methods are combined with an understanding of tissue mechanics to quantitatively evaluate injury mechanisms and rehabilitation of tissues (bone, ligament, tendon, muscle). Three lecture hours per week. One term. Prerequisite: AS/SC/KINE 3030 3.00. Recommended: AS/SC/KINE 3470 3.00.

Cross-listed to: AS/KINE 4475 3.00 and SC/KINE 4475 3.00

AS/KINE 4480 3.00 Sociology of Sport II. This course focuses on social problems in sport. Topics include inequality, sport as work, sport as a spectacle, and sport and the state. Three lecture hours per week. One term. Prerequisite: AS/KINE 3620 3.00 or permission of the course director. Degree credit exclusion: AS/PHED 4480 3.00.

AS/SC/KINE 4500 3.00 Neural Control of Movement. This course reviews fundamental concepts and current issues in motor control, with an emphasis on the brain mechanisms underlying motor behaviour. Topics include walking, looking, reaching, posture and complex skill coordination. Three lecture hours per week. One term. Prerequisite: AS/SC/KINE 3020 3.00 or permission of the course director.

Cross-listed to: AS/KINE 4500 3.00 and SC/KINE 4500 3.00

AS/SC/KINE 4505 3.00 Neurophysiology of Movement in Health and Disease. This course provides an overview of current neurophysiological concepts in motor control, with an emphasis on the neurophysiological principles underlying human movement disorders. Three hours per week, no labs. One term. Prerequisite: AS/SC/KINE 3011 3.00 or AS/SC/KINE 3020 3.00. Degree credit exclusions: AS/SC/KINE 4050M 3.00 (Fall/Winter 2001-2002), AS/SC/KINE 4050A 3.00.

Cross-listed to: AS/KINE 4505 3.00 and SC/KINE 4505 3.00

AS/SC/KINE 4510 3.00 Cellular and Molecular Basis of Muscle Physiology. Topics include muscle development, muscle-specific gene expression, molecular basis of muscle contraction, biochemical plasticity of muscle, sarcolemmal and nuclear signal transduction in muscle. Three lecture hours per week. One term. Prerequisite(s): AS/SC/KINE 3011 3.00, or both SC/BIOL 2020 4.00 and SC/BIOL 2021 4.00.

Cross-listed to: SC/BIOL 4510 3.00 and AS/KINE 4510 3.00 and SC/KINE 4510 3.00

AS/SC/KINE 4520 3.00 Sport Psychology Seminar. The course provides an in-depth examination of selected topics in sport psychology: motivation, imagery, self-regulation and attention. The emphasis is on the

application of mental training skills in sport settings. Three lecture hours per week. One term. Prerequisite: AS/SC/KINE 2000 3.00.

Cross-listed to: AS/KINE 4520 3.00 and SC/KINE 4520 3.00

AS/KINE 4530 3.00 Sport Administration Fieldwork Placement. Students spend a minimum of 40 hours working in an administrative setting related directly to the area of sport administration. The practical experience is supported by lectures, seminars, reports and readings. Three hours per week. One term. Prerequisites: AS/KINE 3490 3.00; students must be in the Sport Administration Certificate.

AS/SC/KINE 4545 6.00 Sport Administration Applied Research Perspectives. This course provides students with an overview of selected current issues facing organizations in the sport industry as well as a grounding in social research methods. Students conduct applied research addressing problems faced by sport organizations. Three lecture hours per week. Two terms. Prerequisites: AS/SC/KINE 2050 3.00 or equivalent; AS/KINE 2380 3.00; AS/KINE 3240 3.00; AS/KINE 3490 3.00; AS/KINE 3510 3.00.

Cross-listed to: AS/KINE 4545 6.00 and SC/KINE 4545 6.00

AS/SC/KINE 4550 6.00 Coaching Field Experience. The student works with a mentor coach for a complete sport season and submits a comprehensive log book. The field experience includes physiological testing, videotape analysis and three other coaching tasks. Three hours per week. Two terms. Prerequisites or corequisites: AS/SC/KINE 4610 3.00. Open only to students in the Coaching Certificate. Note: Students may take this course concurrently with AS/SC/KINE 4610 3.00.

Cross-listed to: AS/KINE 4550 6.00 and SC/KINE 4550 6.00

AS/KINE 4560 3.00 Physical Activity and Children: Pedagogy. This course examines teaching methods available for people working in a physical activity setting with children. Emphasis is placed on the core program components of dance, games and gymnastics. Curriculum and lesson planning for school based physical education is included. Two lecture hours and two laboratory hours per week. One term. Prerequisite: AS/SC/KINE 3340 3.00. Degree credit exclusion: AS/KINE 3520 6.00.

AS/SC/KINE 4570 3.00 Sports Injury Assessment. An advanced course in the recognition and assessment of common athletic injuries. The course emphasizes a detailed understanding of surface anatomy and landmarking, injury mechanics and assessment techniques, and the implications of injury to a body part. Two lecture hours and one laboratory session per week. One term. Prerequisites: AS/SC/KINE 3450 3.00; AS/SC/KINE 3600 3.00; current CPR and First Aid; clinical and field experience. Open only to students in the Athletic Therapy Certificate. Prerequisite or corequisite: AS/SC/KINE 3460 3.00.

Cross-listed to: AS/KINE 4570 3.00 and SC/KINE 4570 3.00

AS/SC/KINE 4580 3.00 Treatment and Rehabilitation of Sports Injuries. An advanced course in the treatment and rehabilitation of common athletic injuries including generalized body reactions to injury, specific tissue responses to trauma, the immediate treatment of injuries, the long-term rehabilitation of injuries and the use of modalities. Two lecture hours and two laboratory hours per week. One term. Prerequisites: AS/SC/KINE 4570 3.00; current CPR and First Aid; clinical and field experience. Open only to students in the Athletic Therapy Certificate.

Cross-listed to: AS/KINE 4580 3.00 and SC/KINE 4580 3.00

AS/SC/KINE 4590 6.00 Athletic Therapy Seminar. An advanced-level course in athletic therapy applying theoretical background to sport-related injuries and rehabilitation. Two seminar hours per week plus extra out-of-class hours. Two terms. Prerequisites: AS/SC/KINE 3450 3.00; AS/SC/KINE 3460 3.00; AS/SC/KINE 3600 3.00; AS/SC/KINE 4570 3.00; AS/SC/KINE 4580 3.00. Open only to students in the Athletic Therapy Certificate or with permission of the course director. Prerequisite or corequisite: AS/SC/KINE 3585 3.00.

Cross-listed to: AS/KINE 4590 6.00 and SC/KINE 4590 6.00

AS/SC/KINE 4595 3.00 Ethics for Kinesiology and Health. This course provides grounding in ethical theories and approaches, and applies ethical paradigms to issues in kinesiology and health science. Two lecture

hours and one seminar hour per week. One term. Prerequisite: AS/SC/KINE 1000 4.00.

Cross-listed to: AS/KINE 4595 3.00 and SC/KINE 4595 3.00

AS/SC/KINE 4600 3.00 Coaching: Science and Methodology. The course focuses on coaching methodology and scientific principles applied to coaching. Methodology includes planning, conducting and evaluating training sessions, and time, stress and team management. Systems of training, scientific conditioning methods and other influences on conditioning and performance are included. Three lecture hours per week. One term. Prerequisites: AS/SC/KINE 2475 3.00, AS/SC/KINE 3610 3.00. Note: Levels I, II and III Theory of the National Coaching Certification are granted with the successful completion of AS/SC/KINE 3610 3.00 and AS/SC/KINE 4600 3.00.

Cross-listed to: AS/KINE 4600 3.00 and SC/KINE 4600 3.00

AS/SC/KINE 4610 3.00 Advanced Coaching Seminar. The course consists of selected topics in coaching. A review of the literature with an application to coaching is presented from the areas of psychology, physiology, sociology, sports management etc. Guest lecturers and symposiums are featured. Three hours per week. One term. Prerequisite: AS/SC/KINE 2475 3.00.

Cross-listed to: AS/KINE 4610 3.00 and SC/KINE 4610 3.00

AS/KINE 4620 3.00 Counselling Skills for Kinesiology and Health Science. This course provides a theoretical basis of behaviour, attitude change and motivation as it pertains to fields related to kinesiology and health science. Practice of the counselling skills with supervised auditory feedback is provided. Two lecture hours and one tutorial hour per week. One term. Prerequisite: AK/AS/SC/PSYC 1010 6.00. Degree credit exclusion: AS/PHED 4620 3.00.

AS/SC/KINE 4640 3.00 Lifestyle and Current Health Issues. This course explores the relationship between health knowledge, health attitudes and health actions of individuals in modern society. Decision-making processes are investigated relative to levels of growth and development and the quality of interactions in a variety of environments. Three lecture hours per week. One term. Prerequisite: AS/SC/KINE 2020 3.00.

Cross-listed to: AS/KINE 4640 3.00 and SC/KINE 4640 3.00

AS/SC/KINE 4660 3.00 Exercise and Addictive Behaviours. This course examines a variety of topics in the area of exercise and health psychology with a particular emphasis on the adaptive and maladaptive aspects of exercise, as well as on issues concerning body image, food intake and eating disorders. Three lecture hours per week. One term. Prerequisites: AK/AS/SC/PSYC 1010 6.00; AS/SC/KINE 2020 3.00.

Cross-listed to: AS/KINE 4660 3.00 and SC/KINE 4660 3.00

AS/SC/KINE 4710 3.00 Psychology of Health and Chronic Disease. This course explores the role of psychological variables in the development, progression and treatment of chronic diseases such as coronary heart disease, cancer and AIDS. Other critically reviewed topics include stress, substance abuse (smoking and alcohol), and injury and violence. Three lecture hours per week. One term. Prerequisite: AK/AS/SC/PSYC 1010 6.00. Degree credit exclusions: AS/SC/KINE 4050D 3.00, AK/ADMS 3750 3.00, AK/AS/SC/PSYC 3170 3.00, AS/SC/PSYC 3440 3.00.

Cross-listed to: AS/KINE 4710 3.00 and SC/KINE 4710 3.00

AS/SC/KINE 4800 3.00 Human Cadaver Dissection. Human cadaver dissection is a laboratory course in which students dissect an anatomical region on a human cadaver. Twenty hours of supervised instruction; 40 hours of self-directed dissection. One term. Prerequisites: AS/SC/KINE 2031 3.00; AS/SC/KINE 3460 3.00; AS/SC/KINE 3465 3.00. Degree credit exclusion: AS/SC/KINE 4050B 3.00. Note: This course is held off-campus. Consult the Kinesiology and Health Science Program for further details.

Cross-listed to: AS/KINE 4800 3.00 and SC/KINE 4800 3.00

AS/SC/KINE 4900 3.00 Exercise Therapy for Chronic Diseases. (formerly AS/SC/KINE 4050E 3.00 - before 2001-2002) An overview of the use of exercise and physical activity in the evaluation and treatment of a

variety of chronic diseases and disabilities. Three lecture hours per week. One term. Prerequisite: AS/SC/KINE 4010 3.00. Degree credit exclusions: AS/SC/KINE 4050E 3.00 (Fall/Winter 2000-2001).

Cross-listed to: AS/KINE 4900 3.00 and SC/KINE 4900 3.00

Kinesiology and Health Science Practicum Program

All students enrolled in Kinesiology and Health Science programs must complete the practicum core, which consists of two practicum credits in each of the following six areas: dance/gymnastics, aquatics, team sports, individual and dual sports, track and field and emergency care, for a total of 12 practicum credits. Students in the Health and Kinesiology Stream must complete an additional six credits for a total of 18 practicum credits. Students in the Applied Certificate Stream must complete an additional four credits for a total of 16 practicum credits. A detailed description of the course offerings and requirements is available from the School of Kinesiology and Health Science.

Practicum Course List

While practicum courses are required of all kinesiology and health science students in order to graduate, they are not applied towards the academic degree requirements in kinesiology and health science.

In the case of practicum courses, the first digit of the course number indicates the practicum area, not the level of the course. The number which follows the four-digit course number in this Calendar indicates the number of practicum credits in the course. One practicum credit represents a total of 12 contact hours of sports activity or equivalent.

Practicum courses provide professional preparation for kinesiology and health science students and as such may require vigorous physical activity. It is strongly recommended that every student in the practicum program have a medical examination prior to participating. Students with disabilities are considered on a case-by-case basis.

Practicum courses are open to both men and women unless otherwise specified. For practicum course descriptions, please consult the School of Kinesiology and Health Science supplemental calendar.

Dance/Gymnastics Courses

AS/SC/PKIN 1002 2.00 Men's Gymnastics I.
 AS/SC/PKIN 1003 2.00 Women's Gymnastics I.
 AS/SC/PKIN 1012 2.00 Men's Gymnastics II.
 AS/SC/PKIN 1013 2.00 Women's Gymnastics II.
 AS/SC/PKIN 1040 2.00 Rhythmic Gymnastics I. (Women)
 AS/SC/PKIN 5070 2.00 Ballroom Dance I.
 AS/SC/PKIN 5075 2.00 Ballroom Dance II.
 AS/SC/PKIN 5085 2.00 Country Dance.
 AS/SC/PKIN 5090 2.00 Jazz Dance I.
 AS/SC/PKIN 5110 2.00 Modern Dance I.
 AS/SC/PKIN 5200 2.00 African and Caribbean Dance.
 AS/SC/PKIN 5900 2.00/5900 3.00/5900 4.00/5900 6.00 Special Topics: Dance.

Aquatics Courses

AS/SC/PKIN 2000 2.00 Swimming I.
 AS/SC/PKIN 2040 2.00 Lifesaving I.
 AS/SC/PKIN 2050 2.00 Lifesaving II: Advanced Lifesaving.
 AS/SC/PKIN 2060 4.00 Lifeguarding.
 AS/SC/PKIN 2070 2.00 Skin and Scuba Diving.
 AS/SC/PKIN 2090 4.00 Aquatic Instructor.
 AS/SC/PKIN 2900 2.00/2900 3.00/2900 4.00/2900 6.00 Special Topics: Aquatics.

Team Sports Courses

AS/SC/PKIN 3000 2.00 Basketball I.
 AS/SC/PKIN 3010 2.00 Basketball II.
 AS/SC/PKIN 3040 2.00 Field Hockey I.
 AS/SC/PKIN 3050 2.00 Field Hockey II.
 AS/SC/PKIN 3080 2.00 Football I.
 AS/SC/PKIN 3090 2.00 Football II.
 AS/SC/PKIN 3120 2.00 Hockey I.
 AS/SC/PKIN 3130 2.00 Hockey II.
 AS/SC/PKIN 3240 2.00 Rugby I.

AS/SC/PKIN 3280 2.00 Soccer I.
 AS/SC/PKIN 3290 2.00 Soccer II: Coaching.
 AS/SC/PKIN 3320 2.00 Volleyball I.
 AS/SC/PKIN 3330 2.00 Volleyball II.
 AS/SC/PKIN 3360 2.00 Beach Volleyball I.
 AS/SC/PKIN 3400 2.00 Softball.
 AS/SC/PKIN 3500 2.00 Team Handball I.
 AS/SC/PKIN 3900 2.00/3900 3.00/3900 4.00/3900 6.00 Special Topics:
 Team Sports.

Individual and Dual Sports Courses

AS/SC/PKIN 4000 2.00 Tai Chi I.
 AS/SC/PKIN 4020 2.00 Yoga I.
 AS/SC/PKIN 4030 2.00 Karate-Do I.
 AS/SC/PKIN 4040 2.00 Aikido Yoshinkan.
 AS/SC/PKIN 4100 2.00 Golf I.
 AS/SC/PKIN 4110 2.00 Golf II.
 AS/SC/PKIN 4150 2.00 Court Games.
 AS/SC/PKIN 4210 2.00 Squash II.
 AS/SC/PKIN 4350 2.00 Tennis I.
 AS/SC/PKIN 4360 2.00 Tennis II.
 AS/SC/PKIN 4370 2.00 Badminton I.
 AS/SC/PKIN 4380 2.00 Badminton II.
 AS/SC/PKIN 4500 2.00 Alpine Skiing I (Downhill).
 AS/SC/PKIN 4510 2.00 Alpine Skiing II (Downhill).
 AS/SC/PKIN 4520 2.00 Cross-Country Skiing I.
 AS/SC/PKIN 4530 2.00 Cross-Country Skiing II: Skating Technique.
 AS/SC/PKIN 4550 2.00 Mountain Biking.
 AS/SC/PKIN 4600 2.00 Strength Training
 AS/SC/PKIN 4900 2.00/4900 3.00/4900 4.00/4900 6.00 Special Topics:
 Individual Sports.

Track and Field Courses

AS/SC/PKIN 6000 2.00 Track and Field I.
 AS/SC/PKIN 6010 2.00 Track and Field II.
 AS/SC/PKIN 6900 2.00/6900 3.00/6900 4.00/6900 6.00 Special Topics:
 Track and Field.

Independent Studies Course

AS/SC/PKIN 7000 2.00 Independent Studies.

Emergency Care Courses

AS/SC/PKIN 7500 2.00 Emergency Care I.
 AS/SC/PKIN 7600 2.00 Emergency Care II.

Additional Courses

AS/SC/PKIN 8040 2.00 Elementary and Recreational Games.
 AS/SC/PKIN 8060 4.00 Personal Training.
 AS/SC/PKIN 8140 4.00 Outdoor Pursuits: Camping I.
 AS/SC/PKIN 8900 2.00/8900 3.00/8900 4.00/8900 6.00 Special Topics.

Korean – Department of Languages, Literatures and Linguistics, Arts

Note: For general regulations and enrolment information please see Languages, Literatures and Linguistics in the Courses of Instruction section of this Calendar.

AS/KOR 1000 6.00 Elementary Modern Standard Korean. An introductory Korean language course for absolute beginners and those with a very limited knowledge of Korean. This course stresses the skills of listening, speaking, reading and writing, and includes some lectures and readings on various aspects of Korean culture. Language of Instruction: Korean/English.

AS/KOR 2000 6.00 Intermediate Modern Standard Korean. This course reviews topics of Korean grammar, and builds on students' prior knowledge of Korean, stressing the skills of listening, speaking, reading and writing. Various aspects of Korean culture are considered. Language

of Instruction: Korean/English. Prerequisite: AS/KOR 1000 6.00, or equivalent; permission of the department.

Language of Instruction: Korean

Labour Studies – Arts

Program Office:

S740 Ross Building 416-736-2100, ext. 77805

Web Address:

<http://www.arts.yorku.ca/sosc/labour/>

Program Coordinator:

TBA

Affiliated Faculty:

P. Craven, Social Science; C. Heron, History/Social Science; J. Kainer, Social Science

Labour studies explores the world of work and workers. Labour studies graduates go on to further education and employment in the trade union movement, private industry, government service, journalism, social work, law, teaching and many other settings. After graduation, students may go on to postgraduate work in labour studies, industrial relations or human resource management, or to professional training in law and other fields.

All labour studies majors are strongly encouraged to enrol in the labour studies work placement (AS/SOSC 4240 6.00) in their final year. This six-credit course offers mentoring and experiential learning in a trade union or other field related setting.

Students majoring in labour studies should meet with the program coordinator each year to arrange their course selection. Students who do not attend advising appointments during the March/April advising period cannot be assured places in labour studies courses.

For specific program requirements and the list of program courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

Language and Learning – Department of Languages, Literatures and Linguistics, Arts

Note: For general regulations and enrolment information please see Languages, Literatures and Linguistics in the Courses of Instruction section of this Calendar.

AS/LLS 1000 6.00 Language and Learning Seminar. This course is intended primarily to assist students with learning disabilities in their transition to University studies. It aims to enhance students' theoretical understanding of language and to develop practical language skills in order to meet the academic demands of the University. Degree credit exclusions: AS/FC 1160 6.00, AS/LLS 1800 6.00.

Languages, Literatures and Linguistics – Arts

Department Office:

S561 Ross Building, 416-736-5016

Web Address:

<http://momiji.arts-dlll.yorku.ca>

Chair of the Department:

P. Avery

Professors:

S. Ehrlich, S. Embleton, R. King, M. Lockshin, D. Mendelsohn, J. Peck, R.W.F. Pope

Associate Professors:

W.P. Ahrens, E. Anderson, D. Armbrorst, P. Avery, R. Bahry, M. Buccheri, E. Costa, J. Dingley, R. Fink, K.J. Golby, S. Horowitz, M. Magnotta, R.B. Marcus, B. Miller, J. Picchione, A. Shulman, R. Sinyor, I. Smith, A. Testaferri, J. Vizmuller-Zocco, M.J. Webber

Assistant Professors:

G. Alboiu, P. Giordan, B. Morgan, R. Scott, K. Toratani, X. Xu, J. Walker

Associate Lecturers:

G. Colussi-Arthur, N. Elson, M. Frescura, N. Ota, L. Pietropaolo

Faculty Members Emeriti:

R. Belladonna, D. Holoch, L. Karumanchiri, M.L. Kay, L. Peña,
H. Schueler, V.G. Stephens, S.-Y. Tsau, P. Valle-Garay

The Department of Languages, Literatures and Linguistics offers courses leading to Honours BA and BA degree programs in German Studies, Italian, Linguistics, Russian, Russian Studies and Spanish. The department also offers Certificates of Language Proficiency in Chinese, German, Italian, Japanese, Modern Greek, Portuguese, Russian and Spanish, as well as an Advanced Certificate in Hebrew and Judaic Studies and a Certificate in Teaching English to Speakers of Other Languages (TESOL).

For course listings, please see the individual languages within this section of the Calendar.

For specific program or certificate requirements, please consult the Faculty of Arts Programs of Study section of this Calendar.

Courses in Language, Literature and Culture

General Regulations

1. Entry to Language Courses

Any student may enrol in a language course at any level, subject to the conditions enumerated below.

- a) Admission to a student's first course in a language at York is by placement questionnaire and/or interview, or departmental authorization slip.
- b) In most cases, students who have completed a 1000-level language course with a grade of at least C are automatically admissible to a course at the next level in the same language, but may be pre-tested for purposes of course or section placement.
- c) Registration in any language course may be limited at the discretion of the department.
- d) Students intending to major or minor in German Studies, Italian, Russian, Russian Studies or Spanish are encouraged to begin study of the relevant language in their first year.

2. Credit for Language Courses

A language course may be taken for credit in any year of any undergraduate program. Credit is given for a course if a grade of D or better is achieved. However, to advance from one level to another level, a student must achieve at least a grade of C.

3. Entry to departmental literature and culture courses, and to courses in classical Greek or Latin literature

- a) In literature and culture courses of the department, instruction is normally given in the relevant language, and entry to courses and programs depends upon the student's ability to function in that language. The department may require a student to demonstrate language competence before granting admission to a course. For details, please consult the department's supplemental calendar.

For regulations concerning entry to courses in classical Greek or Latin literature, please consult a member of the Program in Classical Studies.

Not all of the courses will necessarily be offered in any given year. For details of courses to be offered, please consult the Department of Languages, Literatures and Linguistics supplemental calendar.

Subject to program requirements and degree credit equivalent/exclusion and in-Faculty regulations, students may complete courses offered outside of the Faculty of Arts for credit in one of the programs offered by the Department of Languages, Literatures and Linguistics.

Latin – Arts, Atkinson

Arts:

The Classical Studies Program offers a varied approach to the study of the Greek and Roman world through degree programs in classical studies and classics designed to meet a wide range of needs and interests. As well as courses in Greek and Latin language, the Classical Studies Program offers

a broad range of exciting courses in Greek and Roman history, Greek and Roman literature and culture, Greek and Roman art and architecture, and Greek philosophy. For specific program requirements and the list of program courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

For general regulations and enrolment information for 1000-level Latin courses please see Languages, Literatures and Linguistics in the Courses of Instruction section of this Calendar. For general regulations and enrolment information for 2000-, 3000- and 4000-level Latin courses please see below.

Prerequisites for 2000-level Latin courses: 12U or OAC Latin or AS/LA 1000 6.00 or permission of director of classical studies.

Prerequisites for 3000-level Latin courses: AS/LA 2000 6.00 or permission of director of classical studies.

Atkinson:

Office:

School of Arts and Letters
625 Atkinson Building, Tel: 416-736-5900, Fax: 416-736-5766, e-mail:
aksal@yorku.ca

Coordinator of Classical Studies:

M. Herren

Professors:

R.G. Arthur, P.T.R. Gray

Assistant Professors:

V.G. Stephens

A degree program including Latin courses is available under Classical Studies.

Courses in Latin

AS/LA 1000 6.00 Elementary Latin. This course is intended for students with no previous training in Latin. Note: Further courses in Latin are listed under Classical Studies.

AK/LA 1400 6.00 Introductory Latin. A course for students with little or no previous training in Latin. The course will cover the rudiments of Latin grammar and provide practice in the translation into English of sentences and short passages from Latin authors. (same as GL/HUMA 1850 6.00)

AS/LA 2000 6.00 Intermediate Latin. This is an intensive course in the reading of Latin prose and poetry intended for students who have had Grade 12 U or M Latin (or equivalent). Prerequisites: AS/LA 1000 6.00 or AK/LA 1400 6.00 or permission of the director of classical studies.

AS/LA 3010 3.00 Roman Epic Poetry. A study of two Augustan epics: Vergil's Aeneid and Ovid's Metamorphoses. Prerequisite: AS/LA 2000 6.00 (or equivalent) or permission of the director of classical studies. Degree credit exclusions: AS/LA 4010 3.00 (as of Fall/Winter 2000-2001), AS/LA 3010 6.00.

AS/LA 3020 3.00 Roman Lyric Poetry. A study of selected works of lyric poetry by authors such as Catullus and Horace. Prerequisite: AS/LA 2000 6.00 (or equivalent) or permission of director of classical studies. Degree credit exclusions: AS/LA 4020 3.00 (as of Fall/Winter 2000-2001), AS/LA 3020 6.00.

AS/LA 3030 3.00 Roman Elegiac Poetry. A study of the love poems of Propertius, Tibullus and Ovid. Prerequisites: AS/LA 2000 6.00 or equivalent or permission of the director of classical studies. Degree credit exclusions: AS/LA 4030 3.00 (as of Fall/Winter 2000-2001), AS/LA 3030 6.00.

AS/LA 3060 3.00 Roman Historians. A study of selected works by Roman historians such as Caesar, Livy and Tacitus. Prerequisite: AS/LA 2000 6.00 (or equivalent) or permission of the director of classical studies. Degree credit exclusion: AS/LA 4060 3.00.

AS/LA 3070 3.00 Roman Rhetoric. The course examines the main principles of Roman rhetoric through a study in the original Latin of selected speeches of Cicero, speeches incorporated into other Roman prose texts, and passages from works of rhetorical theory. Prerequisite:

AS/LA 2000 6.00 (or equivalent) or permission of the director of classical studies. Degree credit exclusion: AS/LA 4070 3.00.

AS/LA 3080 3.00 Roman Drama. This course examines Roman drama through a study of one or more plays (comedy and/or tragedy) in the original Latin, with attention to their literary and cultural contexts. Prerequisite: AS/LA 2000 6.00 or equivalent. Degree credit exclusion: AS/LA 4080 3.00.

AS/LA 3110 3.00 The Roman Novel. Studies in Petronius and Apuleius. Prerequisite: AS/LA 2000 6.00 (or equivalent) or permission of director of classical studies. Degree credit exclusions: AS/LA 4110 3.00, AS/LA 4010 3.00 (prior to Fall/Winter 2000-2001), AS/LA 4010 6.00 (prior to Fall/Winter 1993-1994).

AS/LA 4010 3.00 Roman Epic Poetry. A study of two Augustan epics: Vergil's Aeneid and Ovid's Metamorphoses. Prerequisite: Permission of director of classical studies. Degree credit exclusions: AS/LA 3010 3.00, AS/LA 3010 6.00.

AS/LA 4020 3.00 Roman Lyric Poetry. A study of selected works of lyric poetry by authors such as Catullus and Horace. Prerequisite: Permission of director of classical studies. Degree credit exclusions: AS/LA 3020 3.00, AS/LA 3020 6.00.

AS/LA 4030 3.00 Roman Elegiac Poetry. A study of the love poems of Propertius, Tibullus and Ovid. Prerequisite: Permission of director of classical studies. Degree credit exclusions: AS/LA 3030 3.00, AS/LA 3030 6.00.

AS/LA 4060 3.00 Roman Historians. A study of selected works by Roman historians such as Caesar, Livy and Tacitus. Prerequisite: Permission of director of classical studies. Degree credit exclusion: AS/LA 3060 3.00.

AS/LA 4070 3.00 Roman Rhetoric. The course examines the main principles of Roman rhetoric through a study in the original Latin of selected speeches of Cicero, speeches incorporated into other Roman prose texts, and passages from works of rhetorical theory. Prerequisite: Permission of director of classical studies. Degree credit exclusion: AS/LA 3070 3.00.

AS/LA 4080 3.00 Roman Drama. This course examines Roman drama through a study of one or more plays (comedy and/or tragedy) in the original Latin, with attention to their literary and cultural contexts. Prerequisite: Permission of director of classical studies. Degree credit exclusion: AS/LA 3080 3.00.

AS/LA 4110 3.00 The Roman Novel. Studies in Petronius and Apuleius. Prerequisite: Permission of director of classical studies. Degree credit exclusions: AS/LA 3110 3.00, AS/LA 4010 3.00 (prior to Fall/Winter 2000-2001), AS/LA 4010 6.00 (prior to Fall/Winter 1993-1994).

AS/LA 4130 3.00 Guided Readings in Roman Authors. An independent reading program with material chosen according to the interest of the student. Note: Open only with the permission of the director. Please consult the 'Enrolment and Registration' section, Faculty of Arts for regulations on independent reading courses.

AS/LA 4130 6.00 Guided Readings in Roman Authors. An independent reading program with material chosen according to the interest of the student. Note: Open only with the permission of the director. Please consult the 'Enrolment and Registration' section, Faculty of Arts for regulations on independent reading courses. Note: Formerly AS/GK 4030 6.00.

AS/LA 4140 6.00 Honours Essay. Open only to honours candidates with the permission of the director. Note: Consult the director of the program for further information on course offerings in Latin literature. Degree credit exclusion: AS/LA 4040 6.00 (prior to Fall/Winter 2000-2001).

Latin American and Caribbean Studies – Arts

Program Office:

322 Founders College, 416-736-2100, ext. 20260

Web Address:

<http://www.arts.yorku.ca/sosc/lacs/>

Program Coordinator:

A. Davis, Humanities

Affiliated Faculty:

D. Barndt, Environmental Studies; F. Birbalsingh, English; E. Canel, Social Science; D. Cooper-Clark, Atkinson/English; J. Curto, History; A. Davis, Humanities; E. Dosman, Political Science; L. Drummond, Social Science; C. Duran, Atkinson/Social Science; Z. Ellis, French Studies; M. Feliciano, Glendon/Hispanic Studies; W.C. Found, Environmental Studies/Geography; D. Freeman, Geography; L. Goldring, Sociology; M.J. Goodman, Atkinson/Social Science; R. Grinspun, Economics; J.A. Hellman, Political Science/Social Science; M. Johnson, History; K. Kempadoo, Social Science; P. Landstreet, Sociology; J. Lliambias-Wolff, Social Science; M. Magnotta, Languages, Literatures and Linguistics; R. Marcus, Languages, Literatures and Linguistics; E. Melville, History; D. Murray, Anthropology; L.L. North, Political Science; V. Patroni, Social Science; A. Rubenstein, History; A. Sekyi-Otu, Social Science; M. Silverman, Anthropology; A. Simmons, Sociology; H. Smaller, Education; P. Solomon, Education; P.D.M. Taylor, Humanities; D. Trotman, History; P. Valle-Garay, Languages, Literatures and Linguistics; D. Yon, Anthropology/Education

The Interdisciplinary Program in Latin American and Caribbean Studies (LACS) allows students to pursue their interest in Latin America and the Caribbean by taking courses taught in a number of departments and divisions in the Faculty of Arts. Students can double major or minor in Latin American and Caribbean studies and an Honours BA program in the Faculty of Arts. The LACS Program offers introductory core courses in Latin American and Caribbean studies as well as other introductory and upper-level courses in the area. The purpose of the core courses is to introduce and develop interdisciplinary ways of looking at the regions while at the same time integrating knowledge obtained in other courses. The program courses provide shared intellectual meeting grounds for LACS majors and other students. The interdisciplinary nature of the LACS Program ensures a broad and deep understanding of the Latin American and Caribbean regions.

The LACS Program works together with Founders College and the Centre for Research on Latin America and the Caribbean (CERLAC) to offer students a wide variety of events related to the Latin American and Caribbean regions. These include guest lectures by internationally renowned academics, workshops and conferences, and cultural and social events. LACS majors and minors may also use the Documentation Centre of the Centre for Research on Latin America and the Caribbean (CERLAC, 240 York Lanes).

LACS majors are also encouraged to join the LACS Students Association (LACSA), which provides students with an opportunity to meet together and set their own agenda.

Study Abroad Programs: York University has a formal student exchange agreement with the University of the West Indies (UWI) which allows York students to study at UWI and get credit from York. LACS majors may also get academic credit for other courses taken at other universities in the Latin American and Caribbean area. For further information contact International@York or the LACS coordinator.

For specific program requirements and the list of program courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

Law and Society – Arts

Program Office:

S741 Ross Building, 416-736-2100, ext. 66272

Web Address:

<http://www.arts.yorku.ca/lands/>

Program Coordinator:

A. Bunting, Social Science

Affiliated Faculty:

M. Beare, Sociology; A. Bunting, Social Science; D. Ellis, Sociology; L. Green, Philosophy/Law; I. Greene, Political Science; L. Jacobs, Social Science; G. Kellough, Social Science; J. Landa, Economics; P. McDermott, Social Science; J. McMillan, Social Science; P. Oliver, History; R. Schuller, Psychology; G. Szablowski, Political Science; R. Weisman, Social Science; K. White, Social Science

Law is one of the most significant expressions of a society's social and political development. In recent years social scientists from many disciplines have begun to analyze the interplay between law and society. We live in a period of widespread public interest in law that arises from a concern with problems of social justice, social control and social deviance. Academic disciplines such as anthropology, economics, history, philosophy, political science, psychology and sociology have increasingly focused on such issues as the nature and origin of law; law-making and law-breaking; rights and obligations; freedom and responsibility and law as social policy. These are matters of increasing concern to teachers, social workers, businessmen, doctors and public servants whose professional responsibilities demand a knowledge of the relationship of law to their own fields.

The goals of the program may be stated briefly: to affirm the intellectual importance of the study of law and society and law in society; to provide a framework within which faculty and students may explore, within disciplines and between them, descriptive and analytic approaches to the subject; and to sharpen the appreciation of law as part of the active daily life of the student.

The program must be seen within the context of a liberal education. It is not a pre-law school program or a prerequisite for law school admission. It is designed for interested undergraduate students, whatever their future career orientation.

For specific program requirements and the list of program courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

Liberal Studies – Atkinson

For further information, please consult the Faculty of Atkinson Program of Study section of this Calendar.

Linguistics – Arts**Program Office:**

S561 Ross Building, 416-736-5016

Web Address:

<http://www.yorku.ca/linguist/>

Program Coordinator:

S. Ehrlich

Affiliated Faculty:

G. Alboiu, P. Avery, S. Ehrlich, S. Embleton, R. Fink, G. Guy, R. King, B. Miller, I. Smith, J. Walker

Linguistics is concerned with discovering the principles in terms of which natural languages are organized and applying these principles to the description of individual languages. Using systematic descriptions of language and language usage, linguists also investigate how language interacts with our intellectual life.

Because language mediates virtually all forms of human endeavour, the study of linguistics can provide new perspectives on almost every aspect of the humanities and social sciences. In addition, it has applications to primary and secondary education, speech-language pathology and the applied sciences of communication engineering and computer science.

For specific program requirements, please consult the Faculty of Arts Programs of Study section of this Calendar.

Courses in Linguistics

Subject to program requirements and degree credit equivalent/exclusion and in-Faculty regulations, students may complete courses offered outside of the Faculty of Arts for credit in linguistics.

AS/LING 1000 6.00 Introduction to Linguistics. Examination of fundamental principles of language organization in phonology, morphology and syntax from both practical and theoretical points of view with illustrations from English and a variety of other languages. Brief survey of the areas of child language acquisition, historical linguistics and psycholinguistics.

AS/LING 2060 6.00 The Grammatical Structure of English. An investigation of the grammatical structure of modern English, including phonology, morphology, syntax and semantics, within the framework of descriptive linguistics.

Cross-listed to: AS/EN 2060 6.00 and AS/LING 2060 6.00

AS/LING 2110 3.00 Phonetics. This course examines various aspects of phonetics, including the articulatory and acoustic properties of speech sounds. There will also be intensive practice in the recognition of speech sounds as well as limited amount of work on sound production. Prerequisite or corequisite: AS/LING 1000 6.00, or permission of the department.

AS/LING 2120 3.00 Fundamentals of Phonological Analysis. Practical techniques of phonological analysis exemplified by data taken from a variety of languages. Practice in the use of distinctive features and rule formalisms. Prerequisite: AS/LING 1000 6.00 or equivalent with a grade of C.

AS/LING 2140 3.00 Fundamentals of Grammatical Analysis. Practical techniques of grammatical analysis exemplified by data taken from a variety of languages. Prerequisite: AS/LING 1000 6.00 or equivalent, with a grade of C.

AS/LING 2400 3.00 Language in Its Social Context. An introduction to the study of language as a social phenomenon. Topics covered include language varieties; stereotypes and social identity; language, culture and thought; communicative competence; bilingualism and diglossia; languages in contact; language and social deprivation; and language planning and language policy.

AS/LING 2410 3.00 Language and Gender. This course explores the relationship between language and sex/gender systems from a feminist perspective. The main areas investigated are language and gender stereotypes; language, power and women's status; and male versus female communicative style in different socio-cultural contexts.

Cross-listed to: AS/LING 2410 3.00 and GL/SOSC 2900 3.00 and AK/WMST 2501 3.00 and AS/WMST 2501 3.00 and GL/WMST 2501 3.00

AS/LING 2430 3.00 Language, Power and Persuasion. This course investigates the language of power and persuasion. The language used by powerful and powerless groups is analyzed to determine how it reinforces positions of dominance and subordination. The role of language in public persuasion is also considered.

AS/LING 2450 3.00 Language and the Law. This course explores ways in which the discipline of linguistics can shed light on the use of language in the legal system. Topics include the special characteristics of written legal language, spoken language in the courtroom and linguists as expert witnesses.

AS/LING 2460 3.00 South Asian Language and Society. A survey of the diversity and unity of language in the South Asian cultural area and in South Asian diasporic communities focusing on the role of language in defining identity and in mediating social and cultural change.

AS/LING 3040 3.00 Historical Linguistics. An introduction to the study of the development of language systems through time, including the principles of genetic classification of languages, comparative grammar and internal reconstruction. Prerequisite: AS/LING 3120 3.00 with a grade of C+ or better, or permission of the department.

AS/LING 3120 3.00 Phonology. Theoretical principles and practical techniques of phonological analysis exemplified by data taken from a variety of languages. Prerequisites: AS/LING 2110 3.00 and AS/LING 2120 3.00 or equivalent.

AS/LING 3140 3.00 Syntax. This course provides a basic introduction to generative syntax, in particular to the recent work of Noam Chomsky and his followers. Although most of the data analyzed will be English, syntactic patterns of some other languages will be discussed. Prerequisite: AS/LING 2140 3.00 or equivalent.

AS/LING 3150 3.00 Semantics. This course provides an introduction to sentence-level semantics. Some topics in word-level semantics are also considered. Issues are examined primarily from the perspective of a version of truth-conditional semantics. Prerequisite: AS/LING 2140 3.00, or permission of the department. Degree credit exclusions: AS/LING 4150 3.00, AS/LING 4800C 3.00.

AS/LING 3160 3.00 Discourse Analysis. This course provides an analysis of spoken and written texts in context. Specific topics include spoken versus written discourse; the role of context in the interpretation of utterances; cohesion and coherence; and the relationship between information structuring and grammatical forms. Prerequisite: AS/LING 1000 6.00 or AS/LING 2060 6.00.

AS/LING 3210 3.00 First Language Acquisition. This course surveys first language acquisition from a variety of approaches, including social interactionist, innatist and information processing. Prerequisite: AS/LING 1000 6.00 or AS/LING 3220 3.00.

AS/LING 3220 3.00 Psycholinguistics. A survey of psycholinguistic research and theory. Topics chosen from the following: introduction to language structure, biological basis for language, speech perception, sentence processing, speech production, relation of language and thought, language acquisition and atypical language. Prerequisite: AK/AS/SC/PSYC 1010 6.00 or AK/PSYC 2410 6.00, with a minimum grade of C, or AS/LING 1000 6.00. Degree credit exclusions: AK/AS/SC/PSYC 3190 3.00, AK/PSYC 3250 3.00 (before Summer 2002).

Cross-listed to: AS/LING 3220 3.00 and AK/PSYC 3290 3.00 and AS/PSYC 3290 3.00 and SC/PSYC 3290 3.00

AS/LING 3240 3.00 Second Language Acquisition. This course deals with the main issues of second language acquisition. Topics treated include similarities and differences between first and second language acquisition, bilingualism, and various theories such as interlanguage, the contrastive analysis hypothesis and the monitor model. Degree credit exclusion: AS/LING 3230 3.00.

AS/LING 3410 3.00 Writing Systems. Writing Systems. This course deals with the interaction of spoken language and writing structure; functioning and cultural spread of writing systems; historical relationships; and orthographic change, reform and design. Systems studied include Roman, Greek, Cyrillic, Arabic and Hebrew alphabets, and systems of the Indian sub-continent, Korea, China and Japan. Prerequisite: AS/LING 1000 6.00, or AS/LING 2060 6.00 or permission of the department.

AS/LING 3440 3.00 Bilingualism: A Sociolinguistic Approach. This course takes a sociolinguistic approach to the study of language contact. Topics include societal bilingualism, linguistic minorities, language maintenance and shift and language mixture. Special emphasis is placed on borrowing and codeswitching and the factors influencing their use. Prerequisites: AS/LING 1000 6.00, AS/LING 2120 3.00 and AS/LING 2140 3.00. Degree credit exclusion: AS/LING 3800M 3.00.

AS/LING 3600 3.00 Socio-Political Issues in Second Language Teaching. Teaching English to speakers of other languages (TESOL) takes place within a complex socio-political context. Selected issues are used to consider how this context influences the teaching/learning process. Note: This course does not count towards linguistics major credit.

AS/LING 4050 3.00 Topics in Historical Linguistics. This course includes further study of the comparative method and internal reconstruction, the role of typology, and the weighing of different types of evidence, using these as a springboard to consideration of topics of current interest to practising historical linguists. Prerequisite: AS/LING 3040 3.00 with a minimum grade of C+, or permission of the department.

AS/LING 4120 3.00 Phonological Theories. This course concentrates on recent developments in phonological theory within a generative

framework. Specific topics include the representation of segments, autosegmental phonology, syllable structure, metrical phonology and lexical phonology. Prerequisite: AS/LING 3120 3.00 with a grade of C+ or better, or permission of the department.

AS/LING 4140 3.00 Grammatical Theories. This course will examine the metatheoretical issues and assumptions underlying the development of different linguistic theories. The foundations and formal framework of Government-Binding theory, the most recent version of Chomsky's Extended Standard theory, will be introduced and later compared with a competing linguistic theory. Prerequisite: AS/LING 3140 3.00 with a grade of C+ or better, or permission of the department.

AS/LING 4150 3.00 Topics in the Syntax-Semantics Interface. This course examines the interface of the syntactic and semantic modules. The first part introduces students to the fundamentals of formal semantic theory. The second part covers quantificational structures, event semantics and discourse related properties of sentence structure (topic-comment/focus-presuppositions structures). Prerequisite: AS/LING 3140 3.00 with a grade of at least C+. Degree credit exclusions: AS/LING 3150 3.00, AS/LING 4800C 3.00.

AS/LING 4210 3.00 Theoretical Issues in First Language Acquisition. This course treats the acquisition of linguistic structures as seen from the perspectives of principles and parameters theory, the competition model and current theories of phonological development. Prerequisite: AS/LING 3120 3.00, AS/LING 3140 3.00 and AS/LING 3210 3.00 with grades of C+ or better, or permission of the department.

AS/LING 4220 3.00 Acoustic Phonetics. An investigation of acoustic-phonetic aspects of speech and their relation to speech perception and recognition. Practical experience in techniques of acoustic-phonetic research. Prerequisite: AS/LING 2110 3.00 and AS/LING 2120 3.00 with grades of C+ or better, or permission of the department.

AS/LING 4230 3.00 Language Disorders. This course surveys a variety of language disorders, among them aphasia, delayed language development, dyslexia and language dissolution in old age. Specific disorders are discussed within a psycholinguistic framework. There is some discussion of basic strategies for therapy. Prerequisites: Completion of AS/LING 3120 3.00, AS/LING 3140 3.00 and AS/LING 3220 3.00/AS/PSYC 3290 3.00 with grades of C+ or better, or permission of the department.

AS/LING 4240 3.00 Theoretical Issues in Second Language Acquisition. An examination of the relationship between linguistic theory and second language acquisition including the nature of second language learners' linguistic representations from both linguistic and neurolinguistic perspectives, the role of universal grammar, and elicitation and interpretation of second language data. Prerequisite: Completion of AS/LING 3240 3.00 (formerly 3230 3.00) with a grade of B+ and AS/LING 3120 3.00 and AS/LING 3140 3.00 with grades of B, or permission of the department.

AS/LING 4250 3.00 The Evolution of Language. Drawing on comparisons of various non-human communication systems with human language, this course examines the evolution of human language. Different theoretical approaches to the structure of human language and the interrelation of various components of the linguistic system are considered. Prerequisites: AS/LING 2120 3.00 and AS/LING 2140 3.00 with grades of at least C+.

AS/LING 4320 6.00 Field Methods. This course provides students with the skills and techniques necessary to conduct independent linguistic field work. Prerequisites: Completion of AS/LING 2110 3.00, AS/LING 3120 3.00 and AS/LING 3140 3.00 with grades of C+ or better, or permission of the department.

AS/LING 4350 3.00 Pidgin and Creole Linguistics. Pidgins and Creoles are languages that develop from contact between groups of people who have no common means of communication. This course examines the historical and social circumstances in which these languages, their linguistic characteristics and their relevance to linguistic theory. Prerequisites: AS/LING 2120 3.00, AS/LING 2140 3.00, and six

credits at the 3000-level in linguistics. Degree credit exclusion: AS/LING 4800M 3.00.

AS/LING 4400 3.00 Sociolinguistic Variation and Change. This course examines language variation and change. Sociolinguistic variation is not random, but systematically reflects both social organization and features of the sociolinguistic context. Students will gain experience in all stages of sociolinguistic research and do an original research paper. Prerequisites: AS/LING 2120 3.00, AS/LING 2140 3.00 and AS/LING 2400 3.00 with grades of C+ or better, or permission of the department. Degree credit exclusion: AS/LING 3400 3.00.

AS/LING 4440 3.00 Topics in Grammatical Change. This course deals with morphosyntactic change from a broadly generative perspective. It focuses on large-scale changes, changes resulting in dialectal variation, and changes in progress. Both language-internal and language-external mechanisms by which change takes place are considered. Prerequisites: AS/LING 2140 3.00 and AS/LING 3140 3.00, both with grades of C+ or better. AS/LING 2400 3.00 and AS/LING 3040 3.00 are recommended. Degree credit exclusion: AS/LING 4800B 3.00 (Fall/Winter 1999-2000). Integrated with: GS/LING 5440 3.00.

Linguistics and Language Studies – Glendon

Program Office:

242 York Hall

Web Address:

<http://www.yorku.ca/linguist/>

Program Coordinator:

D. Urutescu

Linguistics Minor

The faculty offers a minor in linguistics, to be taken as part of a Combined Honours program with any other department of the college. It consists of 24 credits, to be chosen from the list of courses below. Students must arrange their program in consultation with one of the coordinators of the Linguistics Program.

Mineure en Linguistique

Le Collège offre en outre une mineure en Linguistique, dans le cadre d'un programme bidisciplinaire suivi dans l'un des départements du Collège. Cette mineure exige l'équivalent de 24 crédits, qui devront être choisis dans la liste ci-dessous. Les étudiants prendront conseil auprès d'un coordonnateur de Linguistique pour établir leur programme.

GL/LIN 1716 6.00 Logique formelle et informelle. Le cours a pour but de faire apprécier à l'étudiant la nature et les limites de l'argumentation. Un texte élémentaire de logique sera utilisé comme livre de référence. Le cours poursuivra aussi une étude détaillée de textes choisis.

Language of Instruction: French

Cross-listed to: GL/LIN 1716 6.00 and GL/MODR 1716 6.00

GL/LIN 2600 6.00 Introduction à la linguistique. On étudiera l'appareil conceptuel de la linguistique structurale, en montrant quel regard elle autorise sur les langues en général et sur le français en particulier. L'examen systématique des niveaux d'analyse (phonologie, morphologie, syntaxe et sémantique) permettra d'aborder les principales théories contemporaines : fonctionnalisme, générativisme, linguistique énonciative. Conditions préalables : Avoir terminé le GL/FRLS 1525 3.00 et GL/FRLS 1530 3.00 ou GL/FRAN 1740 3.00 et FRAN 1745 3.00. Cours incompatibles : GL/FRAN 3220 3.00, GL/FRAN 2220 6.00.

Language of Instruction: French

Cross-listed to: GL/FRAN 2600 6.00 and GL/LIN 2600 6.00

GL/LIN 2605 6.00 Introduction to Linguistics. This course introduces the theory and technique of linguistics with illustrations mainly from English. Core areas of study will include phonetics, phonology, morphology, syntax and semantics. Other areas include pragmatics,

discourse analysis and historical linguistics. Degree credit exclusions: GL/EN 2570 6.00, GL/EN 2570 3.00(EN).

Cross-listed to: GL/EN 2605 6.00 and GL/LIN 2605 6.00

GL/LIN 2608 6.00 Approaches to English Grammar. This course offers an introduction to linguistic description of contemporary English, including as principal topics: sound system, vocabulary, syntax, style and usage. The course will also examine, within a linguistic framework, written and oral varieties of English in the world today. Degree credit exclusions: GL/EN 2520 3.00 and GL/EN 2540 3.00.

Cross-listed to: GL/EN 2608 6.00 and GL/LIN 2608 6.00

GL/LIN 2610 6.00 Étude avancée de la langue et de la stylistique espagnole. Ce cours étudie les aspects les plus difficiles de la grammaire espagnole à partir d'exercices avancés portant sur la lecture, l'écriture et la conversation. L'accent est mis sur le développement de l'expression orale et écrite chez les étudiants ainsi que sur les aspects stylistiques de la langue. Condition préalable : Une note de C dans le cours GL/SP 1520 6.00 et GL/SP 1530 6.00 ou la permission du département. Cours incompatible: GL/SP 2240 6.00.

Language of Instruction: French

Cross-listed to: GL/LIN 2610 6.00 and GL/SP 2610 6.00

GL/LIN 2610 6.00 Estudio avanzado de la lengua y de la estilística españolas. Repaso intensivo de los aspectos más difíciles de la gramática española, así como ejercicios avanzados de lectura, escritura y conversación. Se pondrá especial atención al desarrollo de la capacidad expresiva de los estudiantes y a los aspectos estilísticos de la lengua. Prerrequisitos: Una nota de C en GL/SP 1520 6.00 y GL/SP 1530 6.00 o permiso del departamento. Degree credit exclusion: GL/SP 2240 6.00.

Language of Instruction: Spanish

Cross-listed to: GL/LIN 2610 6.00 and GL/SP 2610 6.00

GL/LIN 2640 6.00 Logic. This course is an introduction to the basic concepts and techniques of modern logic. No previous course in logic or philosophy is required.

Cross-listed to: GL/LIN 2640 6.00 and GL/MODR 2640 6.00 and GL/PHIL 2640 6.00

GL/LIN 2690 3.00 Cours de logique intermédiaire. Ce cours fait suite au cours de Logique formelle et informelle. Après une brève revue des règles de déduction matérielle, nous aborderons, entre autres sujets, les règles de quantification, l'étude des systèmes axiomatiques, les preuves de complétude et de consistance etc. Nous amorcerons, Deo volente, une introduction à la logique inductive.

Language of Instruction: French

Cross-listed to: GL/LIN 2690 3.00 and GL/MODR 2690 3.00 and GL/PHIL 2690 3.00

GL/LIN 3010 3.00 Special Topics. This course offers a study of different topics at an advanced level from within the program's interests. Topics to be announced, when available, in the Linguistic Program's mini-calendar.

GL/LIN 3010 3.00 Cours spécial. Ce cours offre une étude de sujets variés à un niveau avancé choisis parmi les intérêts du programme. Les sujets seront annoncés, une fois disponible, dans le mini-anuaire du Programme de Linguistique et Sciences du Langage.

Language of Instruction: French

GL/LIN 3010 3.00 Temas especiales. El estudio de temas variados a un nivel avanzado escogidos de acuerdo los intereses del programa. Los temas estudiados serán anunciados en el mini-calendario del programa de Lingüística y Ciencia del Lenguaje. Prerequisite: Una nota de C en GL/SP 2610 6.00 y GL/SP 2300 6.00 o permiso del departamento.

Language of Instruction: Spanish

GL/LIN 3010 6.00 Special Topics. This course offers a study of different topics at an advanced level from within the program's interests. Topics to be announced, when available, in the Linguistic Program's mini-calendar.

GL/LIN 3010 6.00 Cours spécial. Ce cours offre une étude de sujets variés à un niveau avancé choisis parmi les intérêts du programme. Les sujets seront annoncés, une fois disponible, dans le mini-annuaire du Programme de Linguistique et Sciences du Langage.

Language of Instruction: French

GL/LIN 3010 6.00 Temas especiales. El estudio de temas variados a un nivel avanzado escogidos de acuerdo los intereses del programa. Los temas estudiados serán anunciados en el mini-calendario del programa de Lingüística y Ciencia del Lenguaje. Prerequisite: Una nota de C en GL/SP 2610 6.00 y GL/SP 2300 6.00 o permiso del departamento.

Language of Instruction: Spanish

GL/LIN 3100 3.00 Individual Studies. In some cases, third-year students may choose to do individual studies. To do this, they must submit a description of the proposed subject to the coordinator of the Linguistic Program. This description must be detailed with a bibliography and must be signed by the professor who has agreed to supervise the work.

GL/LIN 3100 3.00 Travail individuel. Dans certains cas exceptionnels, les étudiants de troisième année peuvent choisir un programme d'étude individuel. Pour ce faire, ils doivent soumettre au coordinateur du programme une description de l'étude projetée. Cette description détaillée et accompagnée d'un bibliographie doit être signée par le professeur qui aura accepté de diriger le travail.

Language of Instruction: French

GL/LIN 3100 3.00 Trabajo Individual. Como trabajo individual, los estudiantes de tercer y cuarto año tienen la opción de seguir un curso monográfico dirigido por uno de los profesores del Programa de español. Para ello se necesita el consentimiento del profesor elegido y que el plan de trabajo, descrito en detalle, sea aprobado por el/la coordinador/a del programa de lingüística. Prerequisite: Permiso del departamento.

Language of Instruction: Spanish

GL/LIN 3100 6.00 Individual Studies. In some cases, third-year students may choose to do individual studies. To do this, they must submit a description of the proposed subject to the coordinator of the Linguistic Program. This description must be detailed with a bibliography and must be signed by the professor who has agreed to supervise the work.

GL/LIN 3100 6.00 Travail individuel. Dans certains cas exceptionnels, les étudiants de troisième année peuvent choisir un programme d'étude individuel. Pour ce faire, ils doivent soumettre au coordinateur du programme une description de l'étude projetée. Cette description détaillée et accompagnée d'un bibliographie doit être signée par le professeur qui aura accepté de diriger le travail.

Language of Instruction: French

GL/LIN 3100 6.00 Trabajo Individual. Como trabajo individual, los estudiantes de tercer y cuarto año tienen la opción de seguir un curso monográfico dirigido por uno de los profesores del Programa de español. Para ello se necesita el consentimiento del profesor elegido y que el plan de trabajo, descrito en detalle, sea aprobado por el/la coordinador/a del programa de lingüística. Prerequisite: Permiso del departamento.

Language of Instruction: Spanish

GL/LIN 3200 6.00 Studies in Language Endangerment: Case Studies of Canada's Aboriginal Languages. This course will present a case study of a selected Canadian aboriginal language in its ecological context, including world-view and community perceptions of language endangerment and responses. Linguistic material for analysis and introductory language-learning will be presented.

GL/LIN 3603 3.00 Phonetics. This course offers an introduction to various aspects of phonetics (articulatory and acoustic) with practice in discrimination and transcriptions of speech sounds, with particular attention to, but not limited to, English. Prerequisite: GL/EN 2605 6.00 or GL/EN 2608 6.00 or equivalent or permission of the instructor. Degree credit exclusion: GL/EN 2350 3.00.

Cross-listed to: GL/EN 3603 3.00 and GL/LIN 3603 3.00

GL/LIN 3604 3.00 Varieties of English. Within a linguistic framework, the course analyzes written and oral varieties of English differences in language and language use based on social, temporal, geographical, institutional and individual circumstances. Prerequisite: GL/EN 2605 6.00 or GL/EN 2608 6.00 or permission of the instructor. Degree credit exclusion: GL/EN 2520 3.00(EN).

Cross-listed to: GL/EN 3604 3.00 and GL/LIN 3604 3.00

GL/LIN 3605 6.00 Old English. This course introduces students to the description of English in the period before the normal conquest through a variety of prose and verse texts. Some attention is given to the cultural history of Anglo-Saxon England. Degree credit exclusion: GL/EN 3250 6.00(EN).

Cross-listed to: GL/EN 3605 6.00 and GL/LIN 3605 6.00

GL/LIN 3606 3.00 Learning English as a Second Language. This course studies the process of acquisition of a second language, considered in the light of relevant theory and research, and the analysis of linguistic, psychological, sociocultural and other factors in second language learning. Degree credit exclusion: GL/EN 3500 3.00(EN).

Cross-listed to: GL/EN 3606 3.00 and GL/LIN 3606 3.00

GL/LIN 3607 6.00 Literary Stylistics. Differing concepts and theories of style and models for analysis are discussed and illustrated by a linguistic and interpretive examination of a range of literary texts, prose and verse. Degree credit exclusion: GL/EN 3510 6.00(EN).

Cross-listed to: GL/EN 3607 6.00 and GL/LIN 3607 6.00

GL/LIN 3608 6.00 Modern English. This course studies the phonology, grammar and lexis of present-day English using major treatments of English grammar from scholarly traditional to transformational-generative. Prerequisites: GL/EN 2605 3.00, GL/EN 2606 3.00, GL/EN 2608 3.00. Degree credit exclusion: GL/EN 3540 6.00.

Cross-listed to: GL/EN 3608 6.00 and GL/LIN 3608 6.00

GL/LIN 3609 3.00 Pragmatics. Pragmatics locates meaning within and between speakers as well as the contexts of situation in which they speak. This course investigates speech act theory, politeness theory, relevance theory and cross-linguistic pragmatics. The problem of intentionality as well as non-literal uses of language will be explored. Prerequisite: One introductory six-credits course in linguistics, one three-credits course in semantics. Degree credit exclusion: GL/EN 3550 3.00.

Cross-listed to: GL/EN 3609 3.00 and GL/LIN 3609 3.00

GL/LIN 3610 3.00 Advanced English Syntax. This course offers an advanced study of English syntax using, approaches to investigation and description provided by such theoretical models as transformational-generative, systemic and stratificational. Prerequisites: GL/EN 2605 6.00, GL/EN 2606 3.00 and GL/EN 2608 3.00. Degree credit exclusion: GL/EN 3570 3.00.

Cross-listed to: GL/EN 3610 3.00 and GL/LIN 3610 3.00

GL/LIN 3611 3.00 Semantics. This course offers an examination of modern linguistic approaches to semantics. Prerequisites: GL/EN 2605 6.00, GL/EN 2606 3.00 and GL/EN 2608 3.00. Degree credit exclusion: GL/EN 3580 3.00.

Cross-listed to: GL/EN 3611 3.00 and GL/LIN 3611 3.00

GL/LIN 3621 3.00 Phonétique/Phonologie du français moderne. Phonétique articulatoire; classification des consonnes et des voyelles. Établissement de la distinction entrephonétique et phonologie, notion de phonème, traits distinctifs. Phonétique combinatoire (syllabe, assimilation, liaison) et suprasegmentale (accent, intonation). Description phonologique des français contemporains; étude détaillée du français canadien. Condition préalable : Cours d'introduction à la linguistique. Cours incompatible : GL/Fran 3270 3.00.

Language of Instruction: French

Cross-listed to: GL/Fran 3621 3.00 and GL/LIN 3621 3.00

GL/LIN 3622 3.00 Sémantique. Ce cours analyse la problématique du sens et de la référence, la sémantique lexicale (polysémie, synonymie,

notion de marque), la sémantique grammaticale : (deixis du temps et de la personne, aspects, modalités, détermination). Ce cours traite du passage de la sémantique à la pragmatique : (typologie de l'implicité et actes de discours). Condition préalable : Cours d'introduction à la linguistique. Cours incompatible : GL/FRAN 3390 3.00.

Language of Instruction: French

Cross-listed to: GL/FRAN 3622 3.00 and GL/LIN 3622 3.00

GL/LIN 3632 3.00 Language and Society. This course offers an introduction to the study of language as a social phenomenon. A variety of topics will be covered highlighting language issues arising from living in a multilingual city, country and world.

Cross-listed to: GL/EN 3632 3.00 and GL/LIN 3632 3.00 and GL/SOCI 3632 3.00 and GL/SOSC 3632 3.00

GL/LIN 3650 6.00 Sociolinguistics. An examination of language in its social context with emphasis on language varieties, meaning in situations, language and social organization, and individual linguistic skills. Prerequisite: One introductory (six credits) course in linguistics. GL/EN 2608 6.00 is recommended.

Cross-listed to: GL/EN 3650 6.00 and GL/LIN 3650 6.00 and GL/SOCI 3650 6.00 and GL/SOSC 3650 6.00

GL/LIN 3655 6.00 Language Use in a Bilingual Setting/Usage linguistique en contexte bilingue. Within an applied linguistics framework, this course explores bilingual language use with particular focus on the English/French context in Canada. Topics include definitions of bilingualism and its assessment as well as issues surrounding individual and societal bilingualism./Dans une perspective de linguistique appliquée, ce cours explore l'usage linguistique en contexte bilingue anglais-français (particulièrement au Canada). Les sujets abordés incluent les définitions et la mesure du bilinguisme ainsi que les questions reliées au bilinguisme individuel et sociétal. Prerequisite: Students must have one introductory course (six credits) in linguistics or the equivalent. Students should have an intermediate level of proficiency in their L2 (second language).

Language of Instruction: English/French

Cross-listed to: GL/EN 3655 6.00 and GL/FRAN 3655 6.00 and GL/LIN 3655 6.00

GL/LIN 3910 3.00 Philosophy of Language. The course will introduce students to such topics as the nature of reference, the role of intention and convention in determining meaning, the distinctions between syntax, semantics and pragmatics, the theory of speech acts, and the nature of metaphor and other figurative language.

Cross-listed to: GL/LIN 3910 3.00 and GL/MODR 3910 3.00 and GL/PHIL 3910 3.00

GL/LIN 3915 3.00 The Analytic Tradition. This course will examine the origins of the analytic tradition which now prevails in much of the Western world. The early writings of Frege, Russell and Wittgenstein will be studied, as well as the work of the Vienna Circle.

Cross-listed to: GL/LIN 3915 3.00 and GL/PHIL 3915 3.00

GL/LIN 4000 6.00 Honours Thesis. Students may prepare a thesis on a particular subject. They must already have obtained the agreement of a faculty member in the Linguistic Program to direct the thesis. A second reader will be found to aid in the evaluation. The names of the faculty members and the title of the thesis should be registered with the Linguistic Program office. For further information, please consult the coordinator of the program.

GL/LIN 4000 6.00 Mémoire de spécialisation. Un/e étudiant(e) qui se spécialise en linguistique peut écrire un mémoire sur un sujet particulier. Il/elle doit avoir déjà obtenu l'accord d'un(e) membre du programme linguistique qui dirigera le mémoire. Un(e) deuxième lecteur/lectrice contribuera à l'évaluation. Les noms de ces deux membres du programme seront transmis au bureau du programme linguistique, ainsi que le titre du mémoire. Pour plus de renseignements, veuillez contacter le/la coordinateur/trice du programme linguistique.

Language of Instruction: French

GL/LIN 4000 6.00 Tesis de Especialidad. El/la estudiante que se especializa en lingüística puede escribir una tesis de especialidad sobre un tema específico. Este/a estudiante debe haber obtenido la aprobación de un/a profesor/a del Programa lingüística para dirigir la tesis. Un/a segundo/a lector/a contribuirá a la evaluación de la tesis. Los nombres de los dos profesores y el título de la tesis se registrará en el Programa lingüística. Para más información, contacte al/a la Coordinador/a del Programa lingüística. Prerequisite: Permiso del Program lingüística.

Language of Instruction: Spanish

GL/LIN 4010 3.00 Special Topics. The topic of this course is open to change from year to year. The topic selected allows students to focus more closely than other courses permit on a particular aspect of linguistics.

GL/LIN 4010 3.00 Cours spécial. Ce cours est une étude de sujets variés à un niveau avancé choisis parmi les intérêts du programme. Les sujets seront annoncés, une fois disponible, dans le mini-annuaire de Programme de Linguistique et Sciences du Langage.

Language of Instruction: French

GL/LIN 4010 3.00 Temas especiales. El estudio de temas variados a un nivel avanzado escogidos de acuerdo los intereses del programa. Los temas estudiados serán anunciados en el mini-calendario del programa de lingüística y Ciencia del Lenguaje. Prerequisite: Una nota de C en GL/SP 2610 6.00 y en GL/SP 2300 6.00 o permiso del departamento.

Language of Instruction: Spanish

GL/LIN 4010 6.00 Special Topics. The topic of this course is open to change from year to year. The topic selected allows students to focus more closely than other courses permit on a particular aspect of linguistics.

GL/LIN 4010 6.00 Cours spécial. Ce cours est une étude de sujets variés à un niveau avancé choisis parmi les intérêts du programme. Les sujets seront annoncés, une fois disponible, dans le mini-annuaire de Programme de Linguistique et Sciences du Langage.

Language of Instruction: French

GL/LIN 4010 6.00 Temas espaciales. El estudio de temas variados a un nivel avanzado escogidos de acuerdo los intereses del programa. Los temas estudiados serán anunciados en el mini-calendario del programa de lingüística y Ciencia del Lenguaje. Prerequisite: Una nota de C en GL/SP 2610 6.00 y en GL/SP 2300 6.00 o permiso de Programa LIN.

Language of Instruction: Spanish

GL/LIN 4100 3.00 Directed Reading. Students will do independent reading and/or research, together with written assignments, under the guidance of a member of the Linguistic Program. Prerequisite: Permission of the instructor and the Linguistic Program coordinator.

GL/LIN 4100 3.00 Travail individuel. Les étudiants de quatrième année peuvent choisir un programme d'étude individuel. Pour ce faire, ils doivent soumettre au coordinateur du programme une description de l'étude projetée. Cette description détaillée et accompagnée d'une bibliographie doit être signée par le professeur qui aura accepté de diriger le travail. Condition préalable : Permission du professeur et du/de la coordinateur/trice du programme.

Language of Instruction: French

GL/LIN 4100 3.00 Trabajo Individual. Como trabajo individual, los estudiantes de tercer y cuatro año tienen la opción de seguir un curso monográfico dirigido por uno de los profesores del Programa de español. Para ello se necesita el consentimiento del profesor elegido y que el plan de trabajo, descrito en detalle, sea aprobado por el/la coordinador/a del programa de lingüística. Prerequisite: Permiso del/de la professor/a y del/de la coordinador/a del programa.

Language of Instruction: Spanish

GL/LIN 4100 6.00 Directed Reading. Students will do independent reading and/or research, together with written assignments, under the guidance of a member of the Linguistic Program. Prerequisite: Permission of the instructor and the Linguistic Program coordinator.

GL/LIN 4100 6.00 Travail individuel. Les étudiants de quatrième année peuvent choisir un programme d'étude individuel. Pour ce faire, ils doivent soumettre au coordinateur du programme une description de l'étude projetée. Cette description détaillée et accompagnée d'une bibliographie doit être signée par le professeur qui aura accepté de diriger le travail. Condition préalable : Permission du professeur et du/de la coordinateur/trice du programme.

Language of Instruction: French

GL/LIN 4100 6.00 Trabajo Individual. Como trabajo individual, los estudiantes de tercer y cuarto año tienen la opción de seguir un curso monográfico dirigido por uno de los profesores del Programa de español. Para ello se necesita el consentimiento del profesor elegido y que el plan de trabajo, descrito en detalle, sea aprobado por el/la coordinador/a del programa de lingüística. Prerequisite: Permiso del/de la professor/a y del/de la coordinador/a del programa.

Language of Instruction: Spanish

GL/LIN 4600 3.00 Historia de la lengua española. El estudio del desarrollo de la lengua española desde sus orígenes hasta el presente. Se estudiarán las características del español antiguo y su desarrollo en orden cronológico, teniendo en cuenta, documentos y obras literarias desde los primeros tiempos de la lengua. Prerequisites: Una nota de C en GL/SP 2240 6.00 y GL/SP 2300 6.00 o permiso del departamento. Degree credit exclusion: GL/SP 4210 3.00.

Language of Instruction: Spanish

Cross-listed to: GL/LIN 4600 3.00 and GL/SP 4600 3.00

GL/LIN 4605 3.00 Linguistic Theory. This course studies the major contemporary models of language and linguistic theories. Prerequisite: Nine credits in language selected from: GL/EN 2605 6.00, GL/EN 2606 3.00, GL/EN 2608 3.00, GL/EN 3607 6.00, GL/EN 3608 6.00, GL/EN 3610 3.00, GL/EN 3611 3.00 and GL/EN 3650 6.00. Degree credit exclusion: GL/EN 4350 3.00.

Cross-listed to: GL/EN 4605 3.00 and GL/LIN 4605 3.00

GL/LIN 4606 6.00 History of the English Language. The course provides an outline of both the cultural and the formal linguistic history of English, from its beginnings to the present. Prerequisite: Six credits selected from GL/EN 2605 6.00, GL/EN 2606 3.00 and GL/EN 2608 3.00. Degree credit exclusion: GL/EN 4420 3.00.

Cross-listed to: GL/EN 4606 6.00 and GL/LIN 4606 6.00

GL/LIN 4607 6.00 Functional Linguistics. This course will present the theory of functional linguistics developed by Michael Halliday. From context of situation to medium of expression: semantics, lexicogrammar, phonology and phonetics as the symbolic chain through which we produce meaningful sounds to carry on life in our various social contexts. Prerequisite: Six credits of introductory linguistics. Degree credit exclusion: GL/EN 4435 3.00.

Cross-listed to: GL/EN 4607 6.00 and GL/LIN 4607 6.00

GL/LIN 4608 3.00 Discourse Analysis. This course analyzes theories and descriptive frameworks for the study of connected discourse. Linguistic structures beyond the sentence will be examined in both literary and non-literary texts. Integrated with: GS/EN 6840 6.00. Prerequisite: A minimum of nine credits in language selected from the following: GL/EN 2605 6.00, GL/EN 2606 3.00, GL/EN 2607 3.00, GL/EN 2608 3.00, GL/EN 3607 6.00, GL/EN 3608 6.00, GL/EN 3610 3.00, GL/EN 3611 3.00, GL/EN 3650 6.00 and GL/EN 4605 3.00. Degree credit exclusion: GL/EN 4510 3.00.

Cross-listed to: GL/EN 4608 3.00 and GL/LIN 4608 3.00

GL/LIN 4609 3.00 Advanced Phonetics and Phonology. Building on GL/EN 2606 3.00, this course will introduce detailed work in acoustic phonetics using our micro speech lab for computer speech analysis and display. We will then use the acquired techniques to study international meaning in spoken Canadian English texts. Integrated with: GS/EN 6880 3.00. Prerequisite: GL/EN 2606 3.00. Degree credit exclusion: GL/EN 4530 3.00.

Cross-listed to: GL/EN 4609 3.00 and GL/LIN 4609 3.00

GL/LIN 4610 3.00 Studies in Canadian English. This course examines literary and non-literary varieties of Canadian English. Integrated with: GS/EN 6870 3.00 and GS/LING 5550 3.00. Prerequisite: Six credits selected from GL/EN 2605 6.00, GL/EN 2606 3.00 and GL/EN 2608 3.00. Degree credit exclusion: GL/EN 4550 3.00.

Cross-listed to: GL/EN 4610 3.00 and GL/LIN 4610 3.00

GL/LIN 4651 3.00 Histoire de la langue française. Ce cours comprend deux parties: I. Introduction à la linguistique historique (définition et concepts, méthodologie, changement linguistique). II. Évolution historique du français: origine et formation (langue d'oïl et langue d'oc); l'ancien français (structure et dialectes); le moyen français (transformations linguistiques, français littéraire/français populaire); le français moderne (type et tendances, volutives, le français et les langues romanes, les variétés sociolinguistiques et régionales, le français au Canada). Condition préalable : Cours d'introduction à la linguistique. Cours incompatible : GL/Fran 4210 3.00.

Language of Instruction: French

Cross-listed to: GL/Fran 4651 3.00 and GL/LIN 4651 3.00

GL/LIN 4652 3.00 Syntaxe (Domaine du français). Ce cours offre une analyse syntaxique de la phrase française, menée (selon les années) dans le cadre fonctionnaliste ou générativiste. Les concepts fondamentaux abordés sont les catégories et les fonctions, les phrases simples et complexes, les structures profondes et superficielles, transformations etc. Nous ferons les études de cas (polyvalence du marqueur de constructions factitives, subordination et coordination). Condition préalable : Cours d'introduction à la linguistique. Cours incompatible : GL/Fran 4240 3.00.

Language of Instruction: French

Cross-listed to: GL/Fran 4652 3.00 and GL/LIN 4652 3.00

GL/LIN 4653 3.00 Morphologie (Domaine du français). Ce cours étudie les unités de première articulation (monèmes) et leur variation, la délimitation du champ d'étude (mot, monème, syntagme), les problèmes de segmentation et de classification (variantes, signifiant discontinu, amalgame, signifiant zéro, homophonie). Condition préalable : Cours d'introduction à la linguistique. Cours incompatible : GL/Fran 4220 3.00.

Language of Instruction: French

Cross-listed to: GL/Fran 4653 3.00 and GL/LIN 4653 3.00

GL/LIN 4654 3.00 Linguistique et critique littéraire (domaine du français). Ce cours examine la spécificité de la communication littéraire ainsi que les apports de la linguistique à l'analyse des textes. Condition préalable : Cours d'introduction à la linguistique. Cours incompatible : GL/Fran 4230 3.00(FR).

Language of Instruction: French

Cross-listed to: GL/Fran 4654 3.00 and GL/LIN 4654 3.00

GL/LIN 4655 6.00 Le français et l'anglais en perspective typologique. Branche particulièrement féconde de la linguistique contemporaine, la typologie mobilise un appareil conceptuel spécifique. On présentera celui-ci, avant de procéder à l'étude approfondie de domaines tels que la relation entre rôles sémantiques et fonctions syntaxiques, la détermination du nom, l'aspect et le mode. Condition préalable : GL/Fran 2600 6.00. Cours incompatible : GL/Fran 4250 6.00.

Language of Instruction: French

Cross-listed to: GL/Fran 4655 6.00 and GL/LIN 4655 6.00

GL/LIN 4656 3.00 Processus d'acquisition des langues secondes : perspectives psycholinguistiques. Après avoir comparé l'acquisition de L1 et L2, nous discuterons des facteurs individuels (personnalité, attitude, motivation, aptitude...) qui influencent l'acquisition des L2. Nous examinerons si l'hypothèse d'une période critique (Lenneberg) dans l'acquisition de L1 peut s'appliquer à l'acquisition de L2; nous aborderons la question de l'influence de l'âge sur l'acquisition de L2 et comparerons la qualité de l'apprentissage des L2 par les enfants et par les adultes. Nous analyserons ensuite les différentes théories (Chomsky, Piaget...) qui ont aidé à passer du béhaviorisme au cognitivisme qui étudie la multiplicité des processus d'acquisition ainsi que les styles et les stratégies d'apprentissage. Nous verrons enfin comment les théories

psycholinguistiques actuelles jettent une lumière nouvelle sur l'analyse des erreurs, leur traitement et la notion d'interlangue. Cours incompatible : GL/Fran 4285 3.00(FR).

Language of Instruction: French

Cross-listed to: GL/Fran 4656 3.00 and GL/Lin 4656 3.00

GL/LIN 4657 3.00 La Sociolinguistique et les réalités de la francophonie. Situation historique de la sociolinguistique. Aspects fondamentaux de cette science. Langues - dialectes - patois. Norme, tolérance, tabous, mythes qui régissent les diverses variétés de français (québécois, français, franco-ontarien, créole etc.). Influences des institutions religieuses, du rôle de la femme dans la société, des classes sociales, des fonctions du langage. Condition préalable : Cours d'introduction à la linguistique. Cours incompatible : GL/Fran 4300 3.00(FR).

Language of Instruction: French

Cross-listed to: GL/Fran 4657 3.00 and GL/Lin 4657 3.00

GL/LIN 4658 3.00 Lexicologie/Lexicographie. 1. Généralités : les mots et les choses. Lexique et vocabulaire. Synchronie et diachronie. Lexicologie et lexicographie; leur place au sein de la linguistique 2. Le mot, le signe linguistique et l'unité lexicale. Lexèmes et syntèmes. Identification des unités lexicales : syntèmes, figements et syntagmes. Formation des unités lexicales. L'information lexicale. 3. Lexicologie : typologie des dictionnaires. Nomenclature, article. Condition préalable : cours d'introduction à la linguistique. Cours incompatible : GL/Fran 4310 3.00(FR).

Language of Instruction: French

Cross-listed to: GL/Fran 4658 3.00 and GL/Lin 4658 3.00

GL/LIN 4659 3.00 Structure et changement dans l'évolution du français. Ce cours se propose d'approfondir une des périodes de l'évolution du français qui sont importantes pour mieux comprendre l'histoire du français et/ou la structure du français contemporain. Dans cette perspective, on étudie la formation et la structure de l'ancien français, les innovations apportées par le moyen français ou la formation et la structure du français moderne. Condition préalable : Cours d'introduction à la linguistique. Cours incompatible : GL/Fran 4320 3.00(FR).

Language of Instruction: French

Cross-listed to: GL/Fran 4659 3.00 and GL/Lin 4659 3.00

GL/LIN 4660 3.00 L'analyse phonologique : du concret à l'abstrait et du naturel au formel. Le cours se propose de donner aux étudiants la formation nécessaire pour comprendre et analyser de façon critique les études basées sur quelques-unes des théories phonologiques actuelles. Les étudiants seront aussi capables d'aborder des aspects du français et d'autres langues dans certaines approches phonologiques contemporaines. Condition préalable : Cours d'introduction à la linguistique. Cours incompatible : GL/Fran 4340 3.00.

Language of Instruction: French

Cross-listed to: GL/Fran 4660 3.00 and GL/Lin 4660 3.00

GL/LIN 4661 3.00 Variation stylistique et apprentissage du FLS. On analyse dans ce cours les différences de compétence stylistique entre apprenants du français langue seconde et francophones et on relie ces différences aux pratiques d'enseignement de la langue seconde et aux comportements acquisitionnels des apprenants. Condition préalable : Cours d'introduction à la linguistique Cours incompatible : GL/Fran 4345 3.00.

Language of Instruction: French

Cross-listed to: GL/Fran 4661 3.00 and GL/Lin 4661 3.00

GL/LIN 4695 3.00 English as a World Language. The course examines a number of varieties of English in the world today from three major standpoints: their historical development, their social and geographical deployment and their linguistic characteristics. Prerequisite: At least 12 credits in linguistics offered in English or another language, six credits of which must be from an introductory course in linguistics. Permission of the instructor required.

Cross-listed to: GL/EN 4695 3.00 and GL/ILST 4695 3.00 and GL/LIN 4695 3.00

Mathematics and Statistics – Arts, Pure and Applied Science

Department Office:

N520 Ross Building, 416-736-5250

Web Address:

<http://www.math.yorku.ca>

Chair of the Department:

N. Madras

Professors:

M. Abramson, N. Bergeron, R.G. Burns, S. Kochman, J. Laframboise, N.N. Madras, K.R. Maltman, H. Massam, M.E. Muldoon, G.L. O'Brien, P. Olin, S.D. Promislow, T. Salisbury, A.D. Stauffer, J. Steprans, P.A. Taylor, W. Tholen, E.J.J. van Rensburg, S. Watson, A. Weiss, W.J. Whiteley, M.W. Wong, J. Wu, Y. Wu

Professors Emeriti:

D.A.S. Fraser, S. Guiasu, C. Hruska, I. Kleiner, L. Lorch, R.P. McEachran, P. Rogers, D.C. Russell, A. Shenitzer, D. Solitar

Associate Professors:

J.M.N. Brown, K. Bugajska, S.R. Chamberlin, G.E. Denzel, R.A. Ganong, Y. Gao, H. Huang, A. Kushniruk, G.A. Monette, D.H. Pelletier, P.H. Peskun, A. Pietrowski, N. Purzitsky, P. Song, A.M.K. Szeto

Associate Professors Emeriti:

J.H. Grant, S.W. Lee, T. MacHenry, R.A. Schaufele

Assistant Professors:

Y. Bensliname, L. Cysneiros, I. Farah, X. Gao, J. Ho, H. Ku, D. Liang, S. Wang, Z. Yang, M. Zabrocki, H. Zhu

Associate Lecturer:

B. Wall

Special Renewable Contract:

E. Brettler, H. Joshi

The Department of Mathematics and Statistics offers a wide range of courses in both pure and applied mathematics and statistics. These meet the needs of students who wish to major in mathematics or statistics as well as those who require some knowledge of mathematics or statistics in other disciplines. In addition, there are courses for those who have a general interest in these subjects.

Actuarial Profession. Students interested in the actuarial profession should consult the Department of Mathematics and Statistics for guidance. The department will be glad to suggest a program of courses which will be helpful in preparing for examinations of the Society of Actuaries.

Operations Research. The Canadian Operational Research Society (CORS) has recognized that graduation from a Program in Applied Mathematics, Mathematics or Statistics with a prescribed set of courses will qualify a student for the Diploma in Operations Research awarded by CORS. Interested students should consult the Department of Mathematics and Statistics for guidance.

For specific requirements of programs offered by this department, see the Faculty of Arts Programs of Study section of this Calendar for BA and BA Honours programs and see the Faculty of Pure and Applied Science Programs of Study section of this Calendar for BSc and BSc Honours programs.

Courses in Mathematics and Statistics

When selecting courses, please note the following:

1. A student taking lower-level mathematics courses may wish to make use of the services provided by the department's mathematics laboratory.
2. AS/SC/MATH 1510 6.00 is intended for students who, despite having one or more 12U (or equivalent) courses in mathematics, have a weak mathematical background. AS/SC/MATH 1510 6.00 can serve as preparation for AS/SC/MATH 1515 3.00 and from there entrance to further calculus courses.
3. Note on calculus courses for first-year students.

a) BBA Honours students who wish to take only a minimum amount of mathematics should take both AS/MATH 1530 3.00 and AS/MATH 1540 3.00, or AK/AS/MATH 1550 6.00. The prerequisite for these courses is AS/SC/MATH 1515 3.00 or 12U advanced functions and introductory calculus or OAC calculus or equivalent.

b) Science students (particularly those majoring in biology, geography, kinesiology and health science or psychology) who do not require other specific calculus courses to satisfy degree requirements or as prerequisites for higher-level courses, may take SC/MATH 1505 6.00 to satisfy the Faculty of Pure and Applied Science 1000-level mathematics requirement.

Other students should be guided by paragraphs (c) and (d) below.

c) A student with at least one 12U (or equivalent) course in mathematics, but without 12U advanced functions and introductory calculus (or equivalent), must begin the study of calculus with AS/SC/MATH 1515 3.00.

d) A student with 12U advanced functions and introductory calculus (or equivalent) can begin with AS/SC/MATH 1000 3.00 or AS/SC/MATH 1013 3.00 or AK/AS/SC/MATH 1300 3.00 and then take AS/SC/MATH 1010 3.00 or AS/SC/MATH 1014 3.00 or AK/AS/SC/MATH 1310 3.00.

4. **Course numbering.** Courses with second digit 5 cannot be used to satisfy departmental degree requirements except (i) by students in the bachelor Program in Mathematics for Commerce; and (ii) by students in other programs in a few cases as noted in program descriptions.

With the exception of AS/MATH 1530 3.00, mathematics courses with third digit 3 involve statistics.

Unless otherwise specified, courses whose numbers end in "6.00" (i.e. six-credit courses) have three lecture hours per week for two terms, while those whose numbers end in "3.00" (i.e. three-credit courses) have three lecture hours per week for one term. In addition, problem sessions or tutorials are scheduled for many courses.

5. Arts students should note that some Atkinson Faculty of Liberal and Professional Studies courses are out-of-Faculty and there are restrictions on the number of out-of-Faculty courses that may be taken. Science students should note that some Atkinson Faculty of Liberal and Professional Studies courses are out-of-department — see the restrictions in note 2 under Mathematics and Statistics in the Faculty of Pure and Applied Science Programs of Study section of this Calendar.

Atkinson Faculty of Liberal and Professional Studies mathematics courses which are cross-listed with mathematics courses offered by the Faculties of Arts and Pure and Applied Science are identified in the course outlines below. For a list of other Atkinson Faculty of Liberal and Professional Studies courses which are equivalent to and/or degree credit exclusions for mathematics courses in this Calendar, Faculty of Arts students should consult the Faculty of Arts degree credit exclusion/equivalent tables in the lecture schedules. Science students should consult the Faculty of Pure and Applied science degree credit exclusion/equivalent tables in the lecture schedules and in the Office of Science Academic Services beginning in March each year.

Mathematics – Atkinson, Glendon

Atkinson:

Office:

School of Analytic Studies and Information Technology
2005 Technology Enhanced Learning Building, Tel: 416-736-5232, Fax:
416-736-5188, e-mail: sasit@yorku.ca

Coordinator of Mathematics:

A.C.M. Wong

Professor:

A.C.M. Wong

Professor Emeritus:

P. Rajagopal

Associate Professors:

S.C. Scull, P. Szeptycki, A.P. Trojan, M.D. Walker

Associate Professors Emeriti:

H. Botta, J.M. McNamee

Assistant Professor:

R.G. Albright

Special Assistant Professor:

S. Mykytiuk

General Education Courses

Note: AK/MATH 1000-level courses are part of Atkinson's general education requirement. General education courses do not fulfill elective requirements.

Mathematics general education courses are suitable for all students regardless of mathematical background. The emphasis in these courses is on ideas and their cultural implications. The exception is AK/MATH 1710 6.00 where a preliminary knowledge of elementary algebra is necessary. The focus of AK/MATH 1710 6.00 is on mastering the skills and knowledge essential for in-depth work in any of the mathematically related disciplines; administrative studies, computer science, economics or natural science.

Note: Mathematics courses listed in the major/elective section of the Calendar do not fulfill the mathematics/modes of reasoning general education requirements.

Major/Elective Courses

Note: For all mathematics courses that are cross-listed with the Faculties of Arts, Pure and Applied Science, please consult the York University Calendar for alternative prerequisites and additional exclusions.

Glendon:

Department Office/Bureau du département t:

329 York Hall, 416-487-6731

Chair of the Department/Directeur du département t:

J.-C. Bouhénic

Professor/Professeur titulaire :

D. Spring

Associate Professors/Professeur agrégés :

J.-C. Bouhénic

Assistant Professors/Professeur adjoint :

A. Nenashev

Most of the first-year courses are offered in French and in English each year. However, courses in the second, third and fourth years are generally offered in English and in French in alternate years. For more information please consult the Mathematics Department mini-calendar. /La plupart des cours de première année sont offerts en français et en anglais chaque année. Cependant, les cours de deuxième, troisième et quatrième années sont généralement offerts en anglais une année, puis en français l'année suivante. Pour plus de renseignements, veuillez consulter le mini-annuaire du département.

Courses in Mathematics and Statistics

AS/SC/MATH 1000 3.00 Differential Calculus (Honours Version).

Axioms for real numbers, limits, continuity and differentiability. This course covers slightly fewer topics than AK/AS/SC/MATH 1300 3.00, but covers them in greater depth. It should be taken by all those planning an Honours degree in mathematics or a Specialized Honours degree in statistics. Prerequisite: AS/SC/MATH 1515 3.00, 12U advanced functions and introductory calculus, OAC calculus or equivalent. Degree credit exclusions: AS/SC/MATH 1013 3.00, AK/AS/SC/MATH 1300 3.00, AS/SC/MATH 1505 6.00, AS/MATH 1530 3.00, AK/AS/MATH 1550 6.00, AS/ECON 1530 3.00.

Cross-listed to: AS/MATH 1000 3.00 and SC/MATH 1000 3.00

AS/SC/MATH 1010 3.00 Integral Calculus (Honours Version).

Riemann integral, fundamental theorems of calculus, transcendental functions, integration techniques, sequences, series. This course covers fewer topics than AK/AS/SC/MATH 1310 3.00, but covers them in greater depth. It should be taken by all those planning an Honours degree in mathematics or a Specialized Honours degree in statistics. Prerequisite: AS/SC/MATH 1000 3.00 or permission of the department. Degree credit exclusions: AS/SC/MATH 1014 3.00, AK/AS/SC/MATH 1310 3.00, AS/SC/MATH 1505 6.00, AK/AS/SC/MATH 3110 3.00.

Cross-listed to: AS/MATH 1010 3.00 and SC/MATH 1010 3.00

AS/SC/MATH 1013 3.00 Applied Calculus I. The first half of this course deals with differentiation and the second half with integration. Topics include derivatives of algebraic and transcendental functions, indefinite integrals, techniques of integration, the definite integral and its interpretation as an area. Prerequisite: AS/SC/MATH 1515 3.00, 12U advanced functions and introductory calculus or OAC calculus. Degree credit exclusions: AS/SC/MATH 1000 3.00, AK/AS/SC/MATH 1300 3.00, AS/SC/MATH 1505 6.00, AS/MATH 1530 3.00, AK/AS/MATH 1550 6.00, AS/ECON 1530 3.00.

Cross-listed to: AS/MATH 1013 3.00 and SC/MATH 1013 3.00

AS/SC/MATH 1014 3.00 Applied Calculus II. Applications of differential and integral calculus (e.g. maxima and minima, areas, volumes of revolution, moments and centroids etc.), indeterminate forms, improper integrals, Taylor series, simple ordinary differential equations and an introduction to multivariate calculus. Prerequisite(s): One of AS/SC/MATH 1000 3.00, AS/SC/MATH 1013 3.00, AK/AS/SC/MATH 1300 3.00, or, for non-science students only, six credits from AS/MATH 1530 3.00 and AS/MATH 1540 3.00, AK/AS/MATH 1550 6.00, AS/ECON 1530 3.00 and AS/ECON 1540 3.00. Degree credit exclusions: AS/SC/MATH 1010 3.00, AK/AS/SC/MATH 1310 3.00, AS/SC/MATH 1505 6.00.

Cross-listed to: AS/MATH 1014 3.00 and SC/MATH 1014 3.00

AS/SC/MATH 1016 1.00 Applied Mathematics Module I. Designed for students in applied mathematics to complement and enrich the material in AS/SC/MATH 1013 3.00. The module treats the theory in greater depth, and explores extended applications and modelling. One lecture hour per week. One term. One credit. Prerequisite: 12U advanced functions and introductory calculus, OAC calculus or AS/SC/MATH 1515 3.00. Prerequisite or corequisite: AS/SC/MATH 1013 3.00. Note: AS/SC/MATH 1016 1.00 must be taken within the first 60 credits of a student's program.

Cross-listed to: AS/MATH 1016 1.00 and SC/MATH 1016 1.00

AS/SC/MATH 1017 1.00 Applied Mathematics Module II. Designed for students in applied mathematics to complement and enrich the material in AS/SC/MATH 1014 3.00. The module treats the theory in greater depth, and explores extended applications and modelling. One lecture hour per week. One term. One credit. Prerequisites: AS/SC/MATH 1013 3.00; AS/SC/MATH 1016 1.00. Prerequisite or corequisite: AS/SC/MATH 1014 3.00. Note: AS/SC/MATH 1017 1.00 must be taken within the first 60 credits of a student's program.

Cross-listed to: AS/MATH 1017 1.00 and SC/MATH 1017 1.00

AK/AS/SC/MATH 1019 3.00 Discrete Mathematics for Computer Science. Introduction to abstraction. Use and development of precise formulations of mathematical ideas. Informal introduction to logic; introduction to naïve set theory; induction; relations and functions; big O notation; recursive definitions, recurrence relations and their solutions; graphs and trees. Three lecture hours per week. Plus drop-in optional problem sessions as well as instructor office hours, as these are announced in each term. Prerequisites: AK/AS/SC/MATH 1190 3.00, or both of 12U advanced functions and introductory calculus and 12U geometry and discrete mathematics. Degree credit exclusions: AK/AS/SC/MATH 2320 3.00.

Cross-listed to: AK/COSC 1019 3.00 and AS/COSC 1019 3.00 and SC/COSC 1019 3.00 and AK/MATH 1019 3.00 and AS/MATH 1019 3.00 and SC/MATH 1019 3.00

AK/AS/SC/MATH 1021 3.00 Linear Algebra I. (formerly AS/SC/MATH 2021 3.00 - before 2001-2002) Linear equations, matrices, Gaussian elimination, determinants and vector spaces. This course covers material similar to that in AK/AS/SC/MATH 2221 3.00 but at a more advanced level. Required in Specialized Honours statistics and in all applied mathematics, mathematics and mathematics for commerce programs except the BA Program in Mathematics for Commerce. Prerequisite: A 12U mathematics course or one OAC mathematics course or equivalent. Degree credit exclusions: AS/SC/MATH 1025 3.00, AS/SC/MATH 2021 3.00, AK/AS/SC/MATH 2221 3.00.

Cross-listed to: AK/MATH 1021 3.00 and AS/MATH 1021 3.00 and SC/MATH 1021 3.00

AS/SC/MATH 1025 3.00 Applied Linear Algebra. Topics include spherical and cylindrical coordinates in Euclidean 3-space, general matrix algebra, determinants, vector space concepts for Euclidean n -space (e.g. linear dependence and independence, basis, dimension, linear transformations etc.), an introduction to eigenvalues and eigenvectors. Prerequisites: 12U Geometry & Discrete Math or OAC algebra and geometry. Degree credit exclusions: AK/AS/SC/MATH 1021 3.00, AS/SC/MATH 2021 3.00, AK/AS/SC/MATH 2221 3.00.

Cross-listed to: AS/MATH 1025 3.00 and SC/MATH 1025 3.00

AK/AS/SC/MATH 1090 3.00 Introduction to Logic for Computer Science. The syntax and semantics of propositional and predicate logic. Applications to program specification and verification. Optional topics include set theory and induction using the formal logical language of the first part of the course. Prerequisite: A 12U mathematics course, or one OAC in mathematics or equivalent, or AK/MATH 1710 6.00. Degree credit exclusion: This course may not be taken for degree credit by any student who has passed AK/AS/SC/MATH 4290 3.00.

Cross-listed to: AK/MATH 1090 3.00 and AS/MATH 1090 3.00 and SC/MATH 1090 3.00

AK/AS/SC/MATH 1131 3.00 Introduction to Statistics I. Displaying and describing distributions; relations in categorical data; Simpson's paradox and the need for design; experimental design and sampling design; randomization; probability laws and models; central limit theorem; statistical inference including confidence intervals and tests of significance; matched pairs; simulation. Prerequisite: At least one 12U mathematics course or OAC in mathematics is recommended. Degree credit exclusions: AK/AS/SC/MATH 2560 3.00, SC/BIOL 2060 3.00, SC/BIOL 3090 3.00, AS/ECON 2500 3.00, AS/SC/GEOG 2420 3.00, AS/SC/KINE 2050 3.00, AS/POLS 3300 6.00, AK/AS/SC/PSYC 2020 6.00, AK/AS/SC/PSYC 2021 3.00, AK/PSYC 2510 3.00, AS/SOCI 3030 6.00.

Cross-listed to: AK/MATH 1131 3.00 and AS/MATH 1131 3.00 and SC/MATH 1131 3.00

AK/AS/SC/MATH 1190 3.00 Introduction to Sets and Logic. Sets, functions, relations, induction, proof techniques, logic and logic circuits, basic combinatorics and some basic graph theory. Prerequisite: A 12U mathematics course, or one OAC in mathematics or equivalent, or AK/MATH 1710 6.00. Note: This course may not be taken for degree credit by any student who has passed AK/AS/SC/MATH 1090 3.00 or any 3000- or higher-level mathematics course.

Cross-listed to: AK/MATH 1190 3.00 and AS/MATH 1190 3.00 and SC/MATH 1190 3.00

AK/AS/SC/MATH 1300 3.00 Differential Calculus with Applications. Limits, derivatives with applications, antiderivatives, fundamental theorem of calculus, beginnings of integral calculus. Prerequisite: AS/SC/MATH 1515 3.00 or AK/MATH 1710 6.00 or 12U advanced functions and introductory calculus or OAC calculus or equivalent. Degree credit exclusions: AS/SC/MATH 1000 3.00, AS/SC/MATH 1013 3.00, AS/SC/MATH 1505 6.00, AS/MATH 1530 3.00, AK/AS/MATH 1550 6.00, AS/ECON 1530 3.00.

Cross-listed to: AK/MATH 1300 3.00 and AS/MATH 1300 3.00 and SC/MATH 1300 3.00

AK/AS/SC/MATH 1310 3.00 Integral Calculus with Applications. Transcendental functions, differential equations, techniques of integration, improper integrals, infinite series. Prerequisite(s): One of AS/SC/MATH 1000 3.00, AS/SC/MATH 1013 3.00, AK/AS/SC/MATH 1300 3.00, or, for non-science students only, six credits from AS/MATH 1530 3.00 and AS/MATH 1540 3.00, AK/AS/MATH 1550 6.00, AS/ECON 1530 3.00 and AS/ECON 1540 3.00. Degree credit exclusions: AS/SC/MATH 1010 3.00, AS/SC/MATH 1014 3.00, AS/SC/MATH 1505 6.00.

Cross-listed to: AK/MATH 1310 3.00 and AS/MATH 1310 3.00 and SC/MATH 1310 3.00

AS/SC/MATH 1505 6.00 Mathematics for the Life and Social Sciences. A presentation of the elements of single-variable differential and integral calculus, elementary linear algebra and introductory probability and statistics. This course is designed to provide a comprehensive mathematical background for students of the biological

and social sciences. Emphasis is placed on basic mathematical skills and their applications. Prerequisite: A 12U mathematics course or at least one OAC in mathematics or AS/SC/MATH 1510 6.00. Degree credit exclusions: AS/SC/MATH 1000 3.00, AS/SC/MATH 1010 3.00, AS/SC/MATH 1013 3.00, AS/SC/MATH 1014 3.00, AK/AS/SC/MATH 1300 3.00, AK/AS/SC/MATH 1310 3.00, AS/MATH 1530 3.00, AS/MATH 1540 3.00, AK/AS/MATH 1550 6.00, AS/ECON 1530 3.00, AS/ECON 1540 3.00.

Cross-listed to: AS/MATH 1505 6.00 and SC/MATH 1505 6.00

AS/SC/MATH 1510 6.00 Fundamentals of Mathematics. Designed for the student whose mathematical background is weak and who wishes to take further courses in mathematics. Topics include algebraic equations and inequalities; simple sequences and series; analytic geometry; trigonometry; functions, including algebraic, exponential, logarithmic and trigonometric functions. Note: May not be taken by any student who has taken or is currently taking another university course in mathematics or statistics except for AS/SC/MATH 1500 3.00 or AS/SC/MATH 1515 3.00.

Cross-listed to: AS/MATH 1510 6.00 and SC/MATH 1510 6.00

AS/SC/MATH 1515 3.00 Introduction to Calculus. Elements of differential calculus, antiderivatives and integrals, with applications. Designed for students who have not taken (or have performed inadequately in) OAC calculus. Prerequisite: A 12U mathematics course or one OAC in mathematics or AS/SC/MATH 1510 6.00 or equivalent, or permission of the department. This course may be taken at the same time as the second half of AS/SC/MATH 1510 6.00. Degree credit exclusions: AS/SC/MATH 1500 3.00. May not be taken by any student who has taken or is currently taking another university course in calculus.

Cross-listed to: AS/MATH 1515 3.00 and SC/MATH 1515 3.00

AS/MATH 1530 3.00 Introductory Mathematics for Economists I. This course will introduce and develop topics in differential calculus, integral calculus, and their applications in economics. This course is required for all economics majors and minors; it will also satisfy the mathematics requirement for the Schulich School of Business. Prerequisite: AS/SC/MATH 1515 3.00 or OAC calculus or equivalent. Corequisite or prerequisite: AS/ECON 1000 3.00 or AS/ECON 1010 3.00. Degree credit exclusions: AS/SC/MATH 1000 3.00, AK/AS/SC/MATH 1300 3.00, AK/AS/MATH 1550 6.00, AS/SC/MATH 1013 3.00, AS/SC/MATH 1505 6.00, or equivalent.

Cross-listed to: AS/ECON 1530 3.00 and AS/MATH 1530 3.00

AS/MATH 1540 3.00 Introductory Mathematics for Economists II. This course will introduce and develop topics including matrix algebra, optimization, comparative statics of general function models and their applications in economics. This course is required for all economics majors and minors; it will also satisfy the mathematics requirements for the Schulich School of Business. Prerequisite: One of AS/ECON 1530 3.00, AS/MATH 1530 3.00, or AK/AS/SC/MATH 1300 3.00. Prerequisite or corequisite: AS/ECON 1000 3.00 or AS/ECON 1010 3.00. Degree credit exclusions: AS/SC/MATH 1505 6.00, AK/AS/MATH 1550 6.00. May not be taken by any student who has taken or are taking AK/AS/SC/MATH 1021 3.00 or AS/SC/MATH 1025 3.00 or AS/SC/MATH 2021 3.00 or AK/AS/SC/MATH 2221 3.00 or equivalent.

Cross-listed to: AS/ECON 1540 3.00 and AS/MATH 1540 3.00

AK/AS/MATH 1550 6.00 Mathematics with Management Applications. This course is designed to provide a mathematical background for students in the BBA Honours program. It is also suitable for the bachelor program in mathematics for commerce, but should not be taken by those who intend to major in any other program in mathematics or statistics or in computer science. It includes calculus, matrix algebra and elements of optimization with applications to management. Prerequisite: AS/SC/MATH 1515 3.00 (may also be taken as a first-term corequisite) or 12U advanced functions and introductory calculus or OAC calculus or equivalent. Degree credit exclusions: AS/SC/MATH 1000 3.00, AS/SC/MATH 1013 3.00, AK/AS/SC/MATH 1300 3.00, AS/SC/MATH 1505 6.00, AS/MATH 1530 3.00, AS/MATH 1540 3.00, AS/ECON 1530 3.00, AS/ECON 1540 3.00. This course may not be taken by any student who has taken or is taking AK/AS/SC/MATH 1021 3.00 or AS/SC/MATH 1025 3.00 or AS/SC/MATH 2021 3.00 or AK/AS/SC/MATH 2221 3.00 or equivalent.

Cross-listed to: AK/MATH 1550 6.00 and AS/MATH 1550 6.00

AS/SC/MATH 1580 3.00 The Nature of Mathematics I. Designed to create a positive attitude towards mathematics through an examination of topics relevant to the study of mathematics at the elementary school level. Topics include numeral systems, number theory, nature of algebra and geometry. Intended primarily, but not exclusively, for Faculty of Education students in the primary/junior stream. Degree credit exclusion: Not open to any student who has taken or is taking another university mathematics course unless permission of the course coordinator is obtained.

Cross-listed to: AS/MATH 1580 3.00 and SC/MATH 1580 3.00

AS/MATH 1581 3.00 Business Mathematics I. This course is an introduction to interest rates (simple, compound), annuities (ordinary, due, deferred), amortization (mortgages, other debts), sinking funds, bonds (face value, bond rate, price, yield rate) and depreciation (straight line, constant percentage). Prerequisite: Ontario Grade 12 mathematics or equivalent. Degree credit exclusion: AK/AS/MATH 2580 6.00.

AS/SC/MATH 1590 3.00 The Nature of Mathematics II. A continuation of some of the themes explored in AS/SC/MATH 1580 3.00. Further topics include elements of probability and statistics, the nature of computers, elementary set theory and logic. Prerequisite: AS/SC/MATH 1580 3.00 or permission of the course coordinator. Degree credit exclusion: Not open to any student who has taken or is taking another university mathematics course (except AS/SC/MATH 1580 3.00) unless permission of the course coordinator is obtained.

Cross-listed to: AS/MATH 1590 3.00 and SC/MATH 1590 3.00

GL/MATH 1610 3.00 Introduction to Statistical Methods I. This course covers the elements of probability theory and standard probability distributions, the measures and techniques used in descriptive statistics, principles of sampling and tests of significance. Prerequisite: OAC or Grade 12 mathematics.

Cross-listed to: GL/MATH 1610 3.00 and GL/MODR 1610 3.00 and GL/POLS 2610 3.00 and GL/SOCI 2610 3.00

GL/MATH 1620 3.00 Introductory Statistics II. This course covers the correlation and regression analysis, analysis of variance and parametric tests, and problem work emphasizing applications of statistics in the social sciences. Prerequisite: GL/MATH 1610 3.00 or permission of the instructor.

Cross-listed to: GL/MATH 1620 3.00 and GL/MODR 1620 3.00 and GL/POLS 2620 3.00 and GL/SOCI 2620 3.00

GL/MATH 1650 3.00 Elements of Discrete Mathematics. The logic of propositions; truth tables; valid arguments; logic circuits. Set operations; relations on sets; Boolean functions. Counting principles; permutations; combinations; inclusion-exclusion principle; binomial and multinomial coefficients. Recurrence relations of order one and two; mathematical induction. Prerequisite: At least one OAC mathematics credit or its equivalent, or permission of the instructor. Degree credit exclusions: GL/MATH 1630 3.00 and GL/MATH 1640 3.00.

Cross-listed to: GL/CSLA 1650 3.00 and GL/MATH 1650 3.00 and GL/MODR 1650 3.00

GL/MATH 1670 6.00 Fundamentals of Mathematics. Intended for the student whose (high school) mathematical background is either weak or incomplete, and designed to train and improve the logical and technical skills in the use of basic mathematics. Topics are chosen from basic algebra, linear, quadratic, polynomial, exponential, logarithmic and trigonometric functions, systems of equations, inequalities, probability, series and derivatives. Course equivalent: AK/MATH 1710 6.00. Degree credit exclusion: GL/MATH 1880 6.00(EN).

Cross-listed to: GL/ITEC 1670 6.00 and GL/MATH 1670 6.00 and GL/MODR 1670 6.00

AK/MATH 1700 6.00 The Nature and Growth of Ideas in Mathematics. Students are shown the central position of mathematics in our culture: great discoveries in mathematics and their effect on general culture and society; history of mathematics; mathematics of art and architecture, sound, games and gambling and computing.

AK/MATH 1710 6.00 Fundamentals of Mathematics. A course of consolidation, review and enrichment of basic mathematical principles and techniques. Topics to be covered include: Algebraic equations and inequalities, analytic geometry, trigonometry, elements of finite mathematics and an introduction to calculus. Note 1: To register in AK/MATH 1710 6.00 students must either pass the prerequisite test or have successfully completed the Continuing Education course Elementary Mathematics (CEPM 3910) with a grade of B or higher. (An information sheet describing the prerequisite test and the Continuing Education course and is available from the School of Analytic Studies and Information Technology, 2005 TEL Building.) Note 2: Students who, prior to admission and within the last two years, have completed the following high school mathematics courses with a grade of 70 per cent or higher will be excused from taking and not permitted to take MATH 1710 6.00 (see note 4): 1) (new high school curriculum) grade 12U advanced functions and introduction to calculus and one other grade 12U mathematics course, or 2) (old curriculum) two OAC mathematics courses, one calculus and one other OAC mathematics course. Note 3: If you have completed and passed any equivalent of a university-level calculus course you cannot take AK/MATH 1710 6.00 (see note 4). Note 4: If you have been excused from taking AK/MATH 1710 6.00 you must replace it with another general education mathematics or modes of reasoning course to fulfill the general education requirement.

AK/MATH 1720 6.00 Statistics and Reasoning. This course will attempt to provide some insight into the nature, scope and limitations of statistical analysis in modern society. The questions to be studied are: What types of observation or measurement exist and what approaches are used to summarize and analyze the data thus generated? Are statistics value-free? How do inductive and deductive reasoning enter into the statistical process? Examples such as the consumer price index, opinion polls, lotteries etc., may be discussed. Note: Not open to students who have taken or are taking AK/MATH 2560 3.00, or who have received advanced standing for the equivalent.

GL/MATH 1925 3.00 The Elements of Logic for Computer Science. This course introduces the fundamental elements of formal logic and its applications in computer science. The subjects covered include: propositional logic, reasoning, automatic deduction, resolution, logic circuits, predicate logic, applications in programming logic. Degree credit exclusion: GL/COSC/MODR 2900 6.00.

Cross-listed to: GL/CSLA 1925 3.00 and GL/ITEC 1925 3.00 and GL/MATH 1925 3.00 and GL/MODR 1925 3.00

GL/MATH 1925 3.00 Éléments de logique pour l'informatique. Ce cours introduit les éléments fondamentaux de la logique formelle et ses applications en informatique. Les sujets abordés incluent: la logique des propositions, raisonnements, déduction automatique, résolution, circuits logiques, la logique des prédicats, applications dans la programmation logique. Cours incompatible: GL/COSC/MODR 2900 6.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 1925 3.00 and GL/ITEC 1925 3.00 and GL/MATH 1925 3.00 and GL/MODR 1925 3.00

GL/MATH 1930 3.00 Calculus I. This is a basic course in university calculus. Topics covered are functions, limits, continuity, differentiation, curve sketching, maximization and minimization problems for functions of one variable, the Riemann integral and antiderivatives. Prerequisite: At least one OAC mathematics credit or permission of the department.

Cross-listed to: GL/MATH 1930 3.00 and GL/MODR 1930 3.00

GL/MATH 1930 3.00 Calcul différentiel et intégral I. Ce cours est le premier cours de base de mathématiques de niveau universitaire. Les notions traitées sont : les fonctions, les limites, la continuité, la différentiation, le graphe des fonctions, les problèmes de maximisation et de minimisation de fonctions d'une variable, l'intégrale de Riemann et les primitives. Condition préalable : au moins un crédit en mathématiques CPO ou permission du département.

Language of Instruction: French

Cross-listed to: GL/MATH 1930 3.00 and GL/MODR 1930 3.00

GL/MATH 1940 3.00 Calculus II. A continuation of Calculus I. Topics covered are logarithms and exponentials, trigonometry including inverse trigonometric functions, hyperbolic trigonometry, the techniques of integration, indeterminate forms and l'Hôpital Rule, an introduction to sequences and series. Applications of the integral to the calculation of areas, volumes, work. Prerequisite: GL/MATH 1930 3.00.

Cross-listed to: GL/MATH 1940 3.00 and GL/MODR 1940 3.00

GL/MATH 1940 3.00 Calcul différentiel et intégral II. La suite de Calcul différentiel et intégral I. Les notions traitées sont : les logarithmes et exponentielles, la trigonométrie y compris les fonctions trigonométriques inverses, la trigonométrie hyperbolique, les techniques d'intégration, les formes indéterminées et la règle de l'Hôpital, une introduction aux suites et séries. Applications de l'intégrale aux calculs des aires, des volumes et du travail. Condition préalable : GL/MATH 1930 3.00.

Language of Instruction: French

Cross-listed to: GL/MATH 1940 3.00 and GL/MODR 1940 3.00

AS/SC/MATH 2010 3.00 Vector Differential Calculus. Power series, partial derivatives, linear maps, differentiability of maps from n-space to m-space, chain rule, gradients, tangent lines to curves, tangent planes to surfaces, cross product, implicit function theorem, multidimensional Taylor's theorem with remainder, extrema, quadratic forms, Hessian, Lagrange multipliers. Prerequisite: AS/SC/MATH 1010 3.00 or permission of the department. Degree credit exclusions: AS/SC/MATH 2015 3.00, AK/AS/SC/MATH 2310 3.00.

Cross-listed to: AS/MATH 2010 3.00 and SC/MATH 2010 3.00

AS/SC/MATH 2015 3.00 Applied Multivariate and Vector Calculus. Topics covered include partial derivatives; grad, div, curl and Laplacian operators; line and surface integrals; theorems of Gauss and Stokes; double and triple integrals in various coordinate systems; extrema and Taylor series for multivariate functions. Prerequisite: One of AS/SC/MATH 1010 3.00, AS/SC/MATH 1014 3.00, AK/AS/SC/MATH 1310 3.00; or AS/SC/MATH 1505 6.00 plus permission of the course coordinator. Degree credit exclusions: AS/SC/MATH 2010 3.00, AK/AS/SC/MATH 2310 3.00.

Cross-listed to: AS/MATH 2015 3.00 and SC/MATH 2015 3.00

AS/SC/MATH 2018 1.00 Applied Mathematics Module III. Designed for students in applied mathematics to complement and enrich material in AS/SC/MATH 2015 3.00. The module treats the theory in greater depth, and explores extended applications and modelling. One lecture hour per week. One term. One credit. Prerequisites: AS/SC/MATH 1014 3.00; AS/SC/MATH 1017 1.00. Prerequisite or corequisite: AS/SC/MATH 2015 3.00. Note: AS/SC/MATH 2018 1.00 must be taken within the first 90 credits of a student's program.

Cross-listed to: AS/MATH 2018 1.00 and SC/MATH 2018 1.00

AK/AS/SC/MATH 2022 3.00 Linear Algebra II. Inner product spaces, linear transformations, eigenvalues, diagonalization, least squares, quadratic forms and Markov chains. Similar to AK/AS/SC/MATH 2222 3.00 but at a more advanced level. Required in Specialized Honours applied mathematics, Specialized Honours statistics and in all mathematics and mathematics for commerce programs except the BA program in mathematics for commerce. Prerequisite: AK/AS/SC/MATH 1021 3.00 or AS/SC/MATH 2021 3.00 or permission of the course coordinator. Degree credit exclusion: AK/AS/SC/MATH 2222 3.00.

Cross-listed to: AK/MATH 2022 3.00 and AS/MATH 2022 3.00 and SC/MATH 2022 3.00

AK/AS/SC/MATH 2030 3.00 Elementary Probability. Introduction to the theory of probability as preparation for further study in either mathematical or applied probability and statistics. Topics include probability spaces, conditional probability, independence, random variables, distribution functions, expectation, Chebyshev's inequality, common distributions, moment-generating functions and limit theorems. Prerequisite: One of AS/SC/MATH 1010 3.00, AS/SC/MATH 1014 3.00, AK/AS/SC/MATH 1310 3.00.

Cross-listed to: AK/MATH 2030 3.00 and AS/MATH 2030 3.00 and SC/MATH 2030 3.00

AS/SC/MATH 2041 3.00 Symbolic Computation Laboratory I. An introduction to symbolic computing in the Maple environment. Topics from single-variable differential and integral calculus, including simple ordinary differential equations, are covered. Both mathematical understanding and applications are emphasized. Three lecture hours, open laboratory hours. One term. Three credits. Prerequisites: AK/AS/SC/COSC 1540 3.00 or equivalent computing experience; AS/SC/MATH 1010 3.00 or AS/SC/MATH 1014 3.00 or AK/AS/SC/MATH 1310 3.00.

Cross-listed to: AS/MATH 2041 3.00 and SC/MATH 2041 3.00

AS/SC/MATH 2042 3.00 Symbolic Computation Laboratory II. Advanced symbolic computing with Maple. Topics from linear algebra, differential equations, multivariate calculus, integral theorems are covered. Both mathematical understanding and applications are emphasized. Three lecture hours, open laboratory hours. One term. Three credits. Prerequisites: AS/SC/MATH 2041 3.00; AS/SC/MATH 2010 3.00 or AS/SC/MATH 2015 3.00 or AK/AS/SC/MATH 2310 3.00; AK/AS/SC/MATH 1021 3.00 or AS/SC/MATH 1025 3.00 or AK/AS/SC/MATH 2221 3.00. Prerequisites or corequisites: AK/AS/SC/MATH 2270 3.00; AK/AS/SC/MATH 2022 3.00 or AK/AS/SC/MATH 2222 3.00.

Cross-listed to: AS/MATH 2042 3.00 and SC/MATH 2042 3.00

AK/AS/SC/MATH 2090 3.00 Applications of Logic to Discrete Mathematics. A continuation of AK/AS/SC/MATH 1090 3.00, this course uses formal logic to study topics in discrete mathematics, including sets, relations, functions, induction, the integers. Optional topics include program specification, sequences, recurrence relations. Prerequisite: AK/AS/SC/MATH 1090 3.00 taken after Summer 1998.

Cross-listed to: AK/MATH 2090 3.00 and AS/MATH 2090 3.00 and SC/MATH 2090 3.00

AK/AS/SC/MATH 2131 3.00 Introduction to Statistics II. This course is a continuation of AK/AS/SC/MATH 2030 3.00. It provides students with an introduction to statistical methods with an emphasis on applications using continuous probability models. Prerequisites: AK/AS/SC/MATH 2030 3.00; one of AS/SC/MATH 2010 3.00, AS/SC/MATH 2015 3.00, AK/AS/SC/MATH 2310 3.00. Degree credit exclusion: Not open to any student who has passed or is taking AK/AS/SC/MATH 3131 3.00. Note: Computer/Internet use may be required to facilitate course work.

Cross-listed to: AK/MATH 2131 3.00 and AS/MATH 2131 3.00 and SC/MATH 2131 3.00

AK/AS/SC/MATH 2221 3.00 Linear Algebra with Applications I. Systems of linear equations, linear and affine subspaces of Euclidean n-space, the Gauss-Jordan algorithm, matrices and matrix algebra, determinants, vector space concepts for Euclidean n-space (linear dependence and independence, basis, dimension etc.), various applications. Prerequisite: A 12U mathematics course or OAC algebra or any university mathematics course. Degree credit exclusions: AK/AS/SC/MATH 1021 3.00, AS/SC/MATH 1025 3.00, AS/SC/MATH 2021 3.00.

Cross-listed to: AK/MATH 2221 3.00 and AS/MATH 2221 3.00 and SC/MATH 2221 3.00

AK/AS/SC/MATH 2222 3.00 Linear Algebra with Applications II. Linear transformations and their representation by matrices, change of basis and similarity, eigenvalues and eigenvectors, diagonalization, inner product spaces, orthogonality, the Gram-Schmidt algorithm, least squares approximations, abstract vector spaces, various applications. Prerequisite: AK/AS/SC/MATH 1021 3.00 or AS/SC/MATH 1025 3.00 or AK/AS/SC/MATH 2221 3.00. Degree credit exclusion: AK/AS/SC/MATH 2022 3.00.

Cross-listed to: AK/MATH 2222 3.00 and AS/MATH 2222 3.00 and SC/MATH 2222 3.00

AK/AS/SC/MATH 2270 3.00 Differential Equations. Introduction to differential equations, including a discussion of the formation of mathematical models for real phenomena; solution by special techniques; applications; linear equations; solutions in series; other topics if time permits. Prerequisites: AS/SC/MATH 2010 3.00 or AS/SC/MATH 2015 3.00 or AK/AS/SC/MATH 2310 3.00; AK/AS/SC/MATH 1021 3.00 or AS/SC/MATH 1025 3.00 or AS/SC/MATH 2021 3.00 or AK/AS/SC/MATH 2221 3.00.

Cross-listed to: AK/MATH 2270 3.00 and AS/MATH 2270 3.00 and SC/MATH 2270 3.00

AS/SC/MATH 2280 3.00 The Mathematical Theory of Interest. Topics include measurement of interest, annuities, amortization of loans, bonds, sinking funds and depreciation. The course is at a level which will prepare students for the interest theory portion of the Society of Actuaries examinations. Prerequisite: AS/SC/MATH 1010 3.00 or AS/SC/MATH 1014 3.00 or AK/AS/SC/MATH 1310 3.00. Degree credit exclusions: AK/AS/MATH 2580 6.00, AS/MATH 2581 3.00.

Cross-listed to: AS/MATH 2280 3.00 and SC/MATH 2280 3.00

AK/AS/SC/MATH 2310 3.00 Calculus of Several Variables with Applications. Vector functions, partial derivatives, gradient, multiple integrals, line integrals, optimization, applications. Prerequisites: AS/SC/MATH 1010 3.00 or AS/SC/MATH 1014 3.00 or AK/AS/SC/MATH 1310 3.00. Students should have a knowledge of vector algebra in two and three dimensions. Degree credit exclusions: AS/SC/MATH 2010 3.00, AS/SC/MATH 2015 3.00.

Cross-listed to: AK/MATH 2310 3.00 and AS/MATH 2310 3.00 and SC/MATH 2310 3.00

AK/AS/SC/MATH 2320 3.00 Discrete Mathematical Structures. Algebraic and combinatorial structures required in computer science and other disciplines. Review of sets; induction; combinatorics; graph theory, trees; big Oh-notation, complexity of algorithms; recursive definitions, recurrence relations; posets; congruence relations. This course emphasizes analysis, problem solving and proofs. Prerequisites: AK/AS/SC/MATH 1190 3.00, or AK/AS/SC/MATH 1090 3.00, or any 2000-level MATH course without second digit 5. Students who have not taken AK/AS/SC/MATH 1190 3.00 or AK/AS/SC/MATH 2090 3.00 are advised to review set theory, functions, relations and induction proofs, before the course begins.

Cross-listed to: AK/MATH 2320 3.00 and AS/MATH 2320 3.00 and SC/MATH 2320 3.00

AK/AS/SC/MATH 2500 3.00 An Introduction to the Basic Practice of Statistics. This course provides an introduction to the concepts of statistics with an emphasis on developing a critical attitude towards the use and misuse of statistics in business, health sciences and other areas. Degree credit exclusions: AK/AS/SC/MATH 1131 3.00, AS/SC/MATH 1132 3.00, AK/AS/SC/MATH 2560 3.00, AK/AS/SC/MATH 2570 3.00, SC/BIOL 2060 3.00, SC/BIOL 3090 3.00, AS/ECON 2500 3.00, AS/ECON 3500 3.00, AS/SC/GEOG 2420 3.00, AS/SC/GEOG 3421 3.00, AS/SC/KINE 2050 3.00, AS/SC/KINE 3150 3.00, AS/SC/PHED 2050 3.00, AS/POLS 3300 6.00, AK/AS/SC/PSYC 2020 6.00, AK/AS/SC/PSYC 2021 3.00, AK/AS/SC/PSYC 2022 3.00, AK/PSYC 2510 3.00, AK/PSYC 3110 3.00, AS/SOCI 3030 6.00. Not open to any student who has successfully completed AS/SC/MATH 2030 6.00. May not be taken by students who have taken or are taking any university course in statistics. Note: Computer/Internet use may be required to facilitate course work.

Cross-listed to: AK/MATH 2500 3.00 and AS/MATH 2500 3.00 and SC/MATH 2500 3.00

AK/AS/SC/MATH 2560 3.00 Elementary Statistics I. Displaying and describing distributions, normal distribution. Relationships between variables, regression and correlation. The need for design, experimental design and sampling design. Sampling distributions, bias, variability. Probability models, random variables, probability laws. Prerequisite: Ontario Grade 12 advanced mathematics. Degree credit exclusions: AK/AS/SC/MATH 1131 3.00, SC/BIOL 2060 3.00, SC/BIOL 3090 3.00, AS/ECON 2500 3.00, AS/SC/GEOG 2420 3.00, AS/SC/KINE 2050 3.00, AS/POLS 3300 6.00, AK/AS/SC/PSYC 2020 6.00, AK/AS/SC/PSYC 2021 3.00, AK/PSYC 2510 3.00, AS/SOCI 3030 6.00.

Cross-listed to: AK/MATH 2560 3.00 and AS/MATH 2560 3.00 and SC/MATH 2560 3.00

AK/AS/SC/MATH 2570 3.00 Elementary Statistics II. Binomial distribution, sampling distribution of sample proportions and means, central limit theorem. Confidence intervals, tests and decisions, abuse of tests. Inference for a single mean, comparing two means and for spread. Contingency tables. Simple regression and basic analysis of variance.

Prerequisite: AK/AS/SC/MATH 2560 3.00 or AK/AS/SC/MATH 1131 3.00.
Degree credit exclusions: AS/SC/MATH 1132 3.00, SC/BIOL 2060 3.00, SC/BIOL 3090 3.00, AS/SC/GEOG 2420 3.00, AS/SC/KINE 3150 3.00, AS/POLS 3300 6.00, AK/AS/SC/PSYC 2020 6.00, AK/AS/SC/PSYC 2022 3.00, AK/PSYC 3110 3.00, AS/SOCI 3030 6.00.

Cross-listed to: AK/MATH 2570 3.00 and AS/MATH 2570 3.00 and SC/MATH 2570 3.00

AK/AS/MATH 2580 6.00 Mathematics of Investment and Actuarial Science. Theory of interest; annuities certain; amortization and sinking funds; evaluation of bonds and other investments; depreciation, depletion and capital cost; insurance, including mortality tables, principles of life annuities, premiums and reserves. Prerequisite: One full university mathematics course. Degree credit exclusions: AS/MATH 1581 3.00, AS/SC/MATH 2280 3.00, AS/MATH 2581 3.00.

Cross-listed to: AK/MATH 2580 6.00 and AS/MATH 2580 6.00

AS/MATH 2581 3.00 Business Mathematics II. Spreadsheets and their application to business mathematics; deepening of topics in Business Mathematics I, including continuous compound interest, perpetuities, annuities where payments vary, callable bonds, bond yield rate, capital budgeting; mortality tables, life annuities, life insurance. Prerequisites: AS/MATH 1581 3.00; AK/AS/SC/COSC 1520 3.00 or permission of the instructor. Degree credit exclusions: AS/SC/MATH 2280 3.00; AK/AS/MATH 2580 6.00.

GL/MATH 2630 6.00 Probability and Mathematical Statistics I. Topics include probability spaces, conditional probability, independence, random variables and vectors, expectation and moments, moment-generating functions, classical discrete and continuous distributions, laws of large numbers, central limit theorem, introduction to sampling, sufficiency, point estimation, confidence intervals, hypothesis testing, regression and correlation. Prerequisite or corequisites: GL/MATH 1930 3.00 and GL/MATH 1940 3.00.

Cross-listed to: GL/MATH 2630 6.00 and GL/MODR 2630 6.00

GL/MATH 2650 3.00 Linear Algebra I. This is a basic mathematics course as well as a very useful course for someone who wishes to do applied research in the social sciences. Among the topics considered are vectors, bases, matrices, systems of linear equations, rank and determinants. Some applications of linear algebra to various other disciplines, such as economics, are also included. Prerequisite: GL/MATH 1940 3.00 or equivalent or permission of the department.

Cross-listed to: GL/MATH 2650 3.00 and GL/MODR 2650 3.00

GL/MATH 2650 3.00 Algèbre linéaire I. Algèbre linéaire est un cours de base des mathématiques qui sert également aux étudiants en sciences sociales. Les sujets traités comprendront les vecteurs, les équations linéaires, le rang et le déterminant, avec des applications. Condition préalable : GL/MATH 1940 3.00

Language of Instruction: French

Cross-listed to: GL/MATH 2650 3.00 and GL/MODR 2650 3.00

GL/MATH 2660 3.00 Linear Algebra II. This is a continuation of Linear Algebra I. More about vectors spaces, subspaces, linear transformations. Eigenvalues, eigenvectors, similarity, diagonalization. Positive definite quadratic forms. Inner product spaces and Gram-Schmidt orthogonalization. Prerequisite: GL/MATH 2650 3.00.

Cross-listed to: GL/MATH 2660 3.00 and GL/MODR 2660 3.00

GL/MATH 2660 3.00 Algèbre linéaire II. Ce cours est la suite du cours GL/MATH 2650 3.00. Les sujets traités comprendront les espaces vectoriels, les sous espaces, les applications linéaires, les vecteurs propres, les changements de base, la diagonalisation ainsi que les formes quadratiques positives. Condition préalable : GL/MATH 2650 3.00.

Language of Instruction: French

Cross-listed to: GL/MATH 2660 3.00 and GL/MODR 2660 3.00

GL/MATH 2670 6.00 Second Year Calculus. Numerical series and power series, vector algebra and calculus (with applications to curves, and motions along curves in two and three dimensions). Functions of several

variables, including partial differentiation, properties of surfaces, tangent lines and planes, and the problem of finding maximum and minimum values for such functions (with or without constraining side conditions). The rest of the course is devoted to double and triple integrals, line integrals and surface integrals, and some elementary differential equations. Prerequisite: GL/MATH 1940 3.00.

Cross-listed to: GL/MATH 2670 6.00 and GL/MODR 2670 6.00

GL/MATH 2680 6.00 Mathematics of Investment and Actuarial Science. This course is part of the Mathematics for Commerce Program. Simple and compound interest with applications to calculations of mortgage payments, yields on bonds, interest paid on instalment loans. Depreciation, capitalization, annuities and continuous interest. Mathematical theory of interest with applications to life annuities and life insurance. Prerequisite or corequisite: GL/MATH 1930 3.00 and GL/MATH 1940 3.00.

Cross-listed to: GL/MATH 2680 6.00 and GL/MODR 2680 6.00

GL/MATH 2680 6.00 Les mathématiques de l'investissement et de l'actuariat. Théorie de l'intérêt (simple, composé et continu). Calculs d'hypothèques, de rendements d'obligations, d'amortissement et de remboursement de prêts. Théorie de la dépréciation et de la capitalisation des biens. L'assurance-vie et les rentes viagères. Les primes et les tables de mortalité. Condition préalable ou concomitante : GL/MATH 1930 3.00 et GL/MATH 1940 3.00.

Language of Instruction: French

Cross-listed to: GL/MATH 2680 6.00 and GL/MODR 2680 6.00

AK/MATH 2720 3.00 Quantitative Methods I. An integrated approach to analyzing business problems from various functional areas. Practical business problems are analyzed using quantitative techniques including probability, statistical inference, estimation and regression as well as non-parametric approaches. Prerequisite: ATK/MATH 1710 6.00 or one OAC mathematics course, AK/ADMS 1000 3.00. Note 1: This course is not open to students who have taken AK/MATH 1720 6.00; AK/MATH 2570 3.00, AK/ECON 3470 3.00 or equivalent; and is not open to mathematics majors. Note 2: Requires access to a personal computer that runs Windows 98 Second Edition or higher, with multimedia capability and Internet access. For students without personal access to these computing requirements, University microlabs are available.

Cross-listed to: AK/ADMS 3320 3.00 and AK/MATH 2720 3.00

AK/MATH 2730 3.00 Quantitative Methods II. Continues with a case-oriented approach to quantitative business analysis and research methodologies. Statistical techniques, operational research techniques such as linear programming and modelling, metric and non-metric data analyses are amongst the techniques used. Prerequisite: AK/ADMS 3320 3.00. Note 1: This course is not open to students who have taken AK/ECON 3480 3.00; AK/MATH 3170 6.00; or equivalent; and is not open to mathematics majors. Note 2: Requires access to a personal computer that runs Windows 98 Second Edition or higher, with multimedia capability and Internet access. For students without personal access to these computing requirements, University microlabs are available.

Cross-listed to: AK/ADMS 3330 3.00 and AK/MATH 2730 3.00

AK/MATH 2752 3.00 Sampling Techniques and Survey Design. This course deals with different sampling techniques and their applications to management problems. Survey design, pilot surveys, use of focus groups, in-person interviews, mail surveys, and polling, will also be dealt with. Prerequisite: AK/ECON 3470 3.00 or AK/ADMS 3320 3.00 or, for students with equivalent preparation, permission of the Chair of economics. Note: This course counts as an elective in an economics major.

Cross-listed to: AK/ADMS 3352 3.00 and AK/ECON 3130 3.00 and AK/MATH 2752 3.00

AK/AS/SC/MATH 3010 3.00 Vector Integral Calculus. Integrability of continuous functions over suitable domains, iterated integrals and Fubini's theorem, counterexamples, change of variables, Jacobian determinants, polar and spherical coordinates, volumes, vector fields, divergence, curl, line and surface integrals, Green's and Stokes' theorems, differential forms, general Stokes' theorem. Prerequisite: AS/SC/MATH 2010 3.00 or

AK/AS/SC/MATH 2310 3.00; or AS/SC/MATH 2015 3.00 and written permission of the mathematics undergraduate director (normally granted only to students proceeding in Honours programs in mathematics or in the Specialized Honours program in statistics). Prerequisite or corequisite: AK/AS/SC/MATH 2022 3.00 or AK/AS/SC/MATH 2222 3.00.

Cross-listed to: AK/MATH 3010 3.00 and AS/MATH 3010 3.00 and SC/MATH 3010 3.00

AK/AS/SC/MATH 3020 6.00 Algebra I. Introduction to the basic concepts of abstract algebra, with applications: groups (cyclic, symmetric, Lagrange's theorem, quotients, homomorphism theorems); rings (congruences, quotients, polynomials, integral domains, principal-ideal and unique-factorization domains); fields (field extensions, constructions with ruler and compasses, coding theory). Prerequisite: AK/AS/SC/MATH 2022 3.00 or AK/AS/SC/MATH 2222 3.00.

Cross-listed to: AK/MATH 3020 6.00 and AS/MATH 3020 6.00 and SC/MATH 3020 6.00

AS/SC/MATH 3033 3.00 Classical Regression Analysis. General linear model. Properties and geometry of least-squares estimation. General linear hypothesis, confidence regions and intervals. Multicollinearity. Relationship between ANOVA models and linear models. Residual analysis, outliers, partial and added variable plots. Prerequisites: AK/AS/SC/MATH 2131 3.00 or permission of the course coordinator; AK/AS/SC/MATH 2022 3.00 or AK/AS/SC/MATH 2222 3.00. Degree credit exclusions: AK/AS/SC/MATH 3330 3.00, AS/SC/GEOG 3421 3.00, AK/AS/SC/PSYC 3030 6.00.

Cross-listed to: AS/MATH 3033 3.00 and SC/MATH 3033 3.00

AK/AS/SC/MATH 3034 3.00 Applied Categorical Data Analysis. Regression using categorical explanatory variables, one-way and two-way analysis of variance. Categorical response data, two-way and three-way contingency tables, odds ratios, tests of independence, partial association. Generalized linear models. Logistic regression. Loglinear models for contingency tables. Prerequisite: AS/SC/MATH 3033 3.00 or AK/AS/SC/MATH 3330 3.00. Degree credit exclusion: Not open to any student who has passed or is taking AS/SC/MATH 4130G 3.00. Note: Computer/Internet use may be required to facilitate course work.

Cross-listed to: AK/MATH 3034 3.00 and AS/MATH 3034 3.00 and SC/MATH 3034 3.00

AK/AS/SC/MATH 3050 6.00 Introduction to Geometries. Analytic geometry over a field with vector and barycentric coordinate methods, affine and projective transformations, inverse geometry, foundations of Euclidean and non-Euclidean geometry, applications throughout to Euclidean geometry. Prerequisite: AK/AS/SC/MATH 2022 3.00 or AK/AS/SC/MATH 2222 3.00 or permission of the course coordinator.

Cross-listed to: AK/MATH 3050 6.00 and AS/MATH 3050 6.00 and SC/MATH 3050 6.00

AK/AS/SC/MATH 3090 3.00 Computational Mathematics. Modelling (discrete and continuous, deterministic and stochastic) and practical solutions to general categories of applied problems. Case studies of solutions through modelling and representation of data. Implementation, numerical considerations, efficiency, and application of numerical algorithms. Three lecture hours per week. One term. Three credits. Prerequisites: AK/AS/SC/COSC 2031 3.00 or AK/AS/SC/COSC 1540 3.00, AK/AS/SC/MATH 2022 3.00, AK/AS/SC/MATH 2030 3.00, AK/AS/SC/MATH 2041 3.00.

Cross-listed to: AK/MATH 3090 3.00 and AS/MATH 3090 3.00 and SC/MATH 3090 3.00

AS/SC/MATH 3100 3.00 Famous Problems in Mathematics. An attempt to foster an appreciation of the history, the personalities and some of the content of different areas of mathematics, by means of a study of some specific problems which have exercised the minds of mathematicians. Prerequisites: At least 12 credits from 2000-level mathematics courses without second digit 5, or permission of the course coordinator.

Cross-listed to: AS/MATH 3100 3.00 and SC/MATH 3100 3.00

AK/AS/SC/MATH 3110 3.00 Introduction to Mathematical Analysis.

Proofs in calculus and analysis. Topics include sets, functions, axioms for \mathbb{R} , applications of the completeness axiom, countability, sequences and their limits, monotone sequences, limits of functions, continuity. Prerequisite: AK/AS/SC/MATH 1310 3.00 or AS/SC/MATH 1014 3.00. Prerequisites or corequisites: AK/AS/SC/MATH 2310 3.00 or AS/SC/MATH 2010 3.00 or AS/SC/MATH 2015 3.00; AK/AS/SC/MATH 1021 3.00 or AK/AS/SC/MATH 2221 3.00 or AS/SC/MATH 1025 3.00. Degree credit exclusion: AS/SC/MATH 1010 3.00.

Cross-listed to: AK/MATH 3110 3.00 and AS/MATH 3110 3.00 and SC/MATH 3110 3.00

AK/AS/SC/MATH 3131 3.00 Mathematical Statistics I. Topics include common density functions, probability functions, principle of likelihood, the likelihood function, the method of maximum likelihood, likelihood regions, tests of hypotheses, likelihood ratio tests, goodness of fit tests, conditional tests and confidence sets with a view towards applications. Prerequisite: AK/AS/SC/MATH 2131 3.00 or permission of the course coordinator.

Cross-listed to: AK/MATH 3131 3.00 and AS/MATH 3131 3.00 and SC/MATH 3131 3.00

AK/AS/SC/MATH 3132 3.00 Mathematical Statistics II. Important examples and methods of statistical estimation and hypothesis testing are discussed in terms of their mathematical and statistical properties. Topics include sufficiency, Bayesian statistics, decision theory, most powerful tests, likelihood ratio tests. Prerequisite: AK/AS/SC/MATH 3131 3.00.

Cross-listed to: AK/MATH 3132 3.00 and AS/MATH 3132 3.00 and SC/MATH 3132 3.00

AK/AS/SC/MATH 3140 6.00 Number Theory and Theory of Equations. A study of topics in number theory and theory of equations using relevant methods and concepts from modern algebra, such as Abelian groups, unique factorization domains and field extensions. Prerequisite: AK/AS/SC/MATH 2022 3.00 or AK/AS/SC/MATH 2222 3.00 or permission of the course coordinator.

Cross-listed to: AK/MATH 3140 6.00 and AS/MATH 3140 6.00 and SC/MATH 3140 6.00

AK/AS/SC/MATH 3170 6.00 Operations Research I. A study of linear programming; transportation problems, including network flows, assignment problems and critical path analysis; integer programming; dynamic programming and an introduction to stochastic models. Application to a set of problems representative of the field of operations research. Prerequisites: AK/AS/SC/MATH 1021 3.00 or AS/SC/MATH 1025 3.00 or AK/AS/SC/MATH 2221 3.00; AK/AS/SC/COSC 1520 3.00 or AK/AS/SC/COSC 1540 3.00 or AK/AS/SC/COSC 1020 3.00 or equivalent.

Cross-listed to: AK/MATH 3170 6.00 and AS/MATH 3170 6.00 and SC/MATH 3170 6.00

AK/AS/SC/MATH 3190 3.00 Set Theory and Foundations of Mathematics. The following topics are covered: paradoxes in naive set theory; functions and relations, transfinite numbers, their ordering and their arithmetic; well-ordered sets and ordinal numbers; Zorn's lemma; an introduction to axiomatic set theory. Prerequisite: Six credits from 2000-level mathematics courses without second digit 5.

Cross-listed to: AK/MATH 3190 3.00 and AS/MATH 3190 3.00 and SC/MATH 3190 3.00

GL/MATH 3200 3.00 Differential and Integral Calculus III. This course completes the calculus sequence, bringing together linear algebra and analysis to study functions from \mathbb{R}^n and \mathbb{R}^m . Derivatives and Jacobian matrices; extrema and Hessian matrices; vector differential operators; theorems of Gauss, Green and Stokes. Prerequisite: GL/MATH 2660 3.00 and GL/MATH 2670 6.00.

GL/MATH 3200 3.00 Calcul différentiel et intégral III. Ce cours complète le cycle des cours de calcul différentiel en appliquant l'algèbre linéaire à l'analyse des fonctions de \mathbb{R}^n et \mathbb{R}^m . Les matrices jacobiniennes; les matrices hessiennes; les opérateurs différentiels; les théorèmes de Gauss, Green et Stokes.

Language of Instruction: French

AK/AS/SC/MATH 3210 3.00 Principles of Mathematical Analysis. Rigorous presentation, with proofs, of fundamental concepts of analysis: limits, continuity, differentiation, integration, fundamental theorem, power series, uniform convergence. Prerequisite: At least one of the following four courses or course combinations: 1) AS/SC/MATH 2010 3.00, 2) AK/AS/SC/MATH 3110 3.00, 3) AK/AS/SC/MATH 2310 3.00 and AS/SC/MATH 1010 3.00, 4) AS/SC/MATH 2015 3.00 and AS/SC/MATH 1010 3.00.

Cross-listed to: AK/MATH 3210 3.00 and AS/MATH 3210 3.00 and SC/MATH 3210 3.00

AS/SC/MATH 3241 3.00 Numerical Methods I. An introductory course in computational linear algebra. Topics include simple error analysis, linear systems of equations, non-linear equations, linear least squares and interpolation. Prerequisites: One of AS/SC/MATH 1010 3.00, AS/SC/MATH 1014 3.00, AK/AS/SC/MATH 1310 3.00; one of AK/AS/SC/MATH 1021 3.00, AS/SC/MATH 1025 3.00, AK/AS/SC/MATH 2221 3.00; one of AK/AS/SC/COSC 1540 3.00 or AK/AS/SC/COSC 2031 3.00. Degree credit exclusion: AK/COSC 3511 3.00.

Cross-listed to: AK/COSC 3121 3.00 and AS/COSC 3121 3.00 and SC/COSC 3121 3.00 and AS/MATH 3241 3.00 and SC/MATH 3241 3.00

AS/SC/MATH 3242 3.00 Numerical Methods II. Algorithms and computer methods for solving problems of differentiation, integration, systems of non-linear equations and matrix eigenvalues. Prerequisite: AS/SC/MATH 3241 3.00 or AK/AS/SC/AS/COSC 3121 3.00.

Cross-listed to: AK/COSC 3122 3.00 and AS/COSC 3122 3.00 and SC/COSC 3122 3.00 and AS/MATH 3242 3.00 and SC/MATH 3242 3.00

AK/AS/SC/MATH 3260 3.00 Introduction to Graph Theory. Introductory graph theory with applications. Graphs, digraphs. Eulerian and Hamiltonian graphs. The travelling salesman. Path algorithms; connectivity; trees; planarity; colourings; scheduling; minimal cost networks. Tree searches and sortings, minimal connectors and applications from physical and biological sciences. Prerequisite: At least six credits from 2000-level mathematics courses without second digit 5.

Cross-listed to: AK/MATH 3260 3.00 and AS/MATH 3260 3.00 and SC/MATH 3260 3.00

AS/SC/MATH 3271 3.00 Partial Differential Equations. Partial differential equations of mathematical physics and their solutions in various coordinates, separation of variables in Cartesian coordinates, application of boundary conditions; Fourier series and eigenfunction expansions; generalized curvilinear coordinates; separation of variables in spherical and polar coordinates. Prerequisites: AK/AS/SC/MATH 2270 3.00; AS/SC/MATH 2010 3.00 or AS/SC/MATH 2015 3.00 or AK/AS/SC/MATH 2310 3.00; AK/AS/SC/MATH 3010 3.00 is also desirable, though not essential, as prerequisite for students presenting AS/SC/MATH 2010 3.00 or AK/AS/SC/MATH 2310 3.00.

Cross-listed to: AS/MATH 3271 3.00 and SC/MATH 3271 3.00

AS/SC/MATH 3280 6.00 Actuarial Mathematics. Deterministic and stochastic models for contingent payments. Topics include survival distributions, life tables, premiums and reserves for life insurance and annuities, multiple life contracts, multiple decrement theory. Prerequisite: AS/SC/MATH 2280 3.00. Prerequisite or corequisite: AK/AS/SC/MATH 2131 3.00.

Cross-listed to: AS/MATH 3280 6.00 and SC/MATH 3280 6.00

AK/AS/SC/MATH 3330 3.00 Regression Analysis. Simple regression analysis, multiple regression analysis, matrix form of the multiple regression model, estimation, tests (t- and F-tests), multicollinearity and other problems encountered in regression, diagnostics, model building and variable selection, remedies for violations of regression assumptions. Prerequisites: One of AK/AS/SC/MATH 2131 3.00, AK/AS/SC/MATH 2570 3.00, AS/SC/PSYC 2020 6.00, or equivalent; some acquaintance with matrix algebra (such as is provided in AK/AS/SC/MATH 1021 3.00, AS/SC/MATH 1025 3.00, AS/SC/MATH 1505 6.00, AK/AS/MATH 1550 6.00, or AK/AS/SC/MATH 2221 3.00). Degree credit exclusions: AS/SC/MATH 3033 3.00, AS/ECON 4210 3.00, AS/SC/GEOG 3421 3.00, AS/SC/PSYC 3030 6.00.

Cross-listed to: AK/MATH 3330 3.00 and AS/MATH 3330 3.00 and SC/MATH 3330 3.00

GL/MATH 3400 3.00 Equations différentielles I. Equations différentielles; formulation des modèles mathématiques appliqués à des phénomènes divers du monde réel; solutions par des méthodes spéciales; des équations linéaires. Condition préalable : GL/MATH 2670 6.00. Cours incompatible : GL/MATH 3400 6.00(FR). Équivalence de cours : Faculté : Arts et Atkinson - MATH 2270 3.00.

Language of Instruction: French

AK/AS/SC/MATH 3410 3.00 Complex Variables. Analytic functions, the Cauchy-Riemann equations, complex integrals, the Cauchy integral theorem, maximum modulus theorem. Calculations of residues and applications to definite integrals, two-dimensional potential problems and conformal mappings. Prerequisite: AS/SC/MATH 2010 3.00 or AS/SC/MATH 2015 3.00 or AK/AS/SC/MATH 2310 3.00. (AK/AS/SC/MATH 3010 3.00 is also recommended as a prerequisite for students who have taken AS/SC/MATH 2010 3.00.)

Cross-listed to: AK/MATH 3410 3.00 and AS/MATH 3410 3.00 and SC/MATH 3410 3.00

AK/AS/SC/MATH 3430 3.00 Sample Survey Design. Principal steps in planning and conducting a sample survey. Sampling techniques including simple random sampling, stratified random sampling, cluster sampling and sampling with probabilities proportional to size. Estimation techniques including difference, ratio and regression estimation. Prerequisite: AK/AS/SC/MATH 2131 3.00 or AK/AS/SC/MATH 3330 3.00.

Cross-listed to: AK/MATH 3430 3.00 and AS/MATH 3430 3.00 and SC/MATH 3430 3.00

AK/AS/MATH 3500 6.00 Mathematics in the History of Culture. An introduction to the history of mathematical ideas from antiquity to the present, with emphasis on the role of these ideas in other areas of culture such as philosophy, science and the arts. Prerequisite: Six credits in university-level mathematics (other than AS/SC/MATH 1500 3.00, AS/SC/MATH 1510 6.00 or AS/SC/MATH 1515 3.00) is strongly recommended. Degree credit exclusion: AS/HUMA 3990A 6.00.

Cross-listed to: AK/MATH 3500 6.00 and AS/MATH 3500 6.00

GL/MATH 3650 6.00 Modern Algebra. Introduction to the basic algebraic structures, including groups, rings and fields, Polynomial rings and the field of rational functions. Complex numbers. Field extensions and the elements of Galois Theory. Factorization theory and ideals in rings, with applications to topics in number theory. Prerequisite: GL/MATH 2660 3.00 or permission of the department.

Cross-listed to: GL/MATH 3650 6.00 and GL/MODR 3650 6.00

GL/MATH 3650 6.00 Algèbre moderne. Introduction aux structures algébriques. La théorie des groupes; éléments de la théorie des anneaux et des corps. L'anneau des polynômes et le corps des fonctions rationnelles. Les nombres complexes. Les extensions d'un corps et les éléments de la théorie de Galois. Factorisation dans un anneau; les idéaux; applications à la théorie des nombres. Condition préalable : GL/MATH 2660 3.00 ou la permission du département.

Language of Instruction: French

Cross-listed to: GL/MATH 3650 6.00 and GL/MODR 3650 6.00

GL/MATH 3660 6.00 Recherche opérationnelle. Le cours explore la programmation linéaire. On y étudie la méthode du simplexe et la théorie de la dualité ainsi que l'algorithme de la transportation avec applications aux problèmes des réseaux, du partage et de l'itinéraire le plus court. On se penche, enfin, sur les problèmes de l'arbre engendrant minimal et du flux maximal. Condition préalable : GL/MATH 2650 3.00.

Language of Instruction: French

Cross-listed to: GL/MATH 3660 6.00 and GL/MODR 3660 6.00

AS/SC/MATH 4000 3.00 Individual Project. A project of a pure or applied nature in mathematics or statistics under the supervision of a faculty member. The project allows the student to apply mathematical or statistical knowledge to problems of current interest. A report is required at

the conclusion of the project. Prerequisites: Open to all students in Honours programs in the Department of Mathematics and Statistics. Permission of the program director is required. Applied mathematics students can enrol only after they have completed the core program in applied mathematics.

Cross-listed to: AS/MATH 4000 3.00 and SC/MATH 4000 3.00

AS/SC/MATH 4000 6.00 Individual Project. A project of a pure or applied nature in mathematics or statistics under the supervision of a faculty member. The project allows the student to apply mathematical or statistical knowledge to problems of current interest. A report is required at the conclusion of the project. Prerequisites: Open to all students in Honours programs in the Department of Mathematics and Statistics. Permission of the program director is required. Applied mathematics students can enrol only after they have completed the core program in applied mathematics.

Cross-listed to: AS/MATH 4000 6.00 and SC/MATH 4000 6.00

GL/MATH 4000 6.00 Lectures dirigées en mathématiques. Les étudiants peuvent faire des études indépendantes sous la direction d'un membre du département avec l'approbation du chef du département. Condition préalable : la permission du département.

Language of Instruction: French

AK/AS/SC/MATH 4010 6.00 Real Analysis. Survey of the real and complex number systems, and inequalities. Metric space topology. The Riemann-Stieltjes integral. Some topics of advanced calculus, including more advanced theory of series and interchange of limit processes. Lebesgue measure and integration. Fourier series and Fourier integrals. Prerequisite: AK/AS/SC/MATH 3210 3.00 or permission of the course coordinator.

Cross-listed to: AK/MATH 4010 6.00 and AS/MATH 4010 6.00 and SC/MATH 4010 6.00

AK/AS/SC/MATH 4020 6.00 Algebra II. Continuation of Algebra I, with applications: groups (finitely generated Abelian groups, solvable groups, simplicity of alternating groups, group actions, Sylow's theorems, generators and relations); fields (splitting fields, finite fields, Galois theory, solvability of equations); additional topics (lattices, Boolean algebras, modules). Prerequisite: AK/AS/SC/MATH 3020 6.00 or permission of the course coordinator. Degree credit exclusion: AS/SC/MATH 4241 3.00.

Cross-listed to: AK/MATH 4020 6.00 and AS/MATH 4020 6.00 and SC/MATH 4020 6.00

AS/SC/MATH 4034 3.00 Data Mining. This course will review some of the principal methods used for data mining, with the goal of placing them in common perspective and providing a unifying overview. Prerequisites: AK/AS/SC/MATH 3034 3.00 and AK/AS/SC/MATH 3430 3.00 or permission of the course director. Corequisites: AK/AS/SC/MATH 4630 3.00 or AK/AS/SC/MATH 4730 3.00 or AK/AS/SC/MATH 4230 3.00 Note: SAS and Splus computing environments will be used to facilitate course work.

Cross-listed to: AS/MATH 4034 3.00 and SC/MATH 4034 3.00

AK/MATH 4035 3.00 Data Analysis Systems. Introduces Windows-based data processing software and provides overview of computing concepts and data processing using SAS, SPSS and STATA. Covers such statistics techniques as data visualization and summary, analysis of contingency tables, linear and logistic regressions, and nonparametric methods. Elective course for: BAS-ITEC and BAS-HURE. Prerequisite: AK/ADMS 3320 3.00. Note: Requires access to a personal computer that runs Windows 98 Second Edition or higher, with multimedia capability and Internet access. For students without personal access to these computing requirements, University microlabs are available.

Cross-listed to: AK/ADMS 4370 3.00 and AK/MATH 4035 3.00

AK/AS/SC/MATH 4080 6.00 Topology. Topological spaces, continuity, connectedness, compactness, nets, filters, metrization theorems, complete metric spaces, function spaces, fundamental group, covering spaces. Prerequisite: AK/AS/SC/MATH 3210 3.00 or permission of the course coordinator.

Cross-listed to: AK/MATH 4080 6.00 and AS/MATH 4080 6.00 and SC/MATH 4080 6.00

AS/SC/MATH 4110N 3.00 Topics in Analysis: Ordinary Differential Equations. This course is an advanced introduction to a number of topics in ordinary differential equations. The topics are chosen from the following: existence and uniqueness theorems, qualitative theory, oscillation and comparison theory, stability theory, bifurcation, dynamical systems, boundary value problems, asymptotic methods. Prerequisite: Permission of the course coordinator.

Cross-listed to: AS/MATH 4110N 3.00 and SC/MATH 4110N 3.00

AS/SC/MATH 4130B 3.00 Topics in Probability and Statistics: Introduction to the Theory and Methods of Time Series Analysis. A systematic presentation of many statistical techniques for the analysis of time series data. The core topics include time dependence and randomness, trend, seasonality and error, stationary processes, ARMA and ARIMA processes, multivariate time series models and state-space models. Prerequisites: AS/SC/MATH 3033 3.00; AK/AS/SC/MATH 3131 3.00; or permission of the course coordinator. Degree credit exclusions: AK/AS/SC/COSC 4242 3.00, AK/AS/SC/COSC 4451 3.00, SC/EATS 4020 3.00, AS/SC/MATH 4830 3.00, AS/SC/MATH 4930C 3.00, SC/PHYS 4060 3.00, SC/PHYS 4250 3.00.

Cross-listed to: AS/MATH 4130B 3.00 and SC/MATH 4130B 3.00

AS/SC/MATH 4130E 3.00 Topics in Probability and Statistics: Bayesian Statistics. The course first presents the Bayesian approach to single- and multi-parameter statistical problems and its links to major concepts of non-Bayesian statistics. The course then studies some hierarchical models and regression models using a Bayesian approach with theory and examples. Prerequisite: Permission of the course coordinator.

Cross-listed to: AS/MATH 4130E 3.00 and SC/MATH 4130E 3.00

AS/SC/MATH 4130K 3.00 Topics in Probability and Statistics: Survival Analysis. This course provides students with an introduction to the statistical methods for analyzing censored data which are common in medical research, industrial life-testing and related fields. Topics include accelerated life models, proportional hazards model, time dependent covariates. Prerequisites: AK/AS/SC/MATH 3131 3.00; either AS/SC/MATH 3033 3.00 or AK/AS/SC/MATH 3330 3.00. Note: Computer/Internet use is essential for course work.

Cross-listed to: AS/MATH 4130K 3.00 and SC/MATH 4130K 3.00

AS/SC/MATH 4134 3.00 Biostatistics. This course provides students with an introduction to the statistical methods which are commonly used in medical research and epidemiology. Prerequisites: AK/AS/SC/MATH 3034 3.00 and AK/AS/SC/MATH 3131 3.00 or permission of the course director. Note: SAS and Splus computing environments will be used to facilitate course work.

Cross-listed to: AS/MATH 4134 3.00 and SC/MATH 4134 3.00

AS/SC/MATH 4140A 3.00 Topics in Number Theory: Algebraic Number Theory. The course covers prime numbers, modular arithmetic, diophantine problems, cryptography and, possibly, some other contemporary applications. Prerequisite: AK/AS/SC/MATH 3020 6.00 or permission of the course coordinator.

Cross-listed to: AS/MATH 4140A 3.00 and SC/MATH 4140A 3.00

AS/SC/MATH 4141 3.00 Advanced Numerical Methods. Numerical methods for solving ordinary differential equations; optimization problems: steepest descents, conjugate gradient methods; approximation theory: least squares, orthogonal polynomials, Chebyshev and Fourier approximation, Padé approximation. Prerequisite: AK/AS/SC/MATH 2270 3.00; AS/SC/MATH 3242 3.00 or AK/AS/SC/COSC 3122 3.00.

Cross-listed to: AS/MATH 4141 3.00 and SC/MATH 4141 3.00

AS/SC/MATH 4160 3.00 Combinatorial Mathematics. Topics from algebra of sets, permutations, combinations, occupancy problems, partitions of integers, generating functions, combinatorial identities, recurrence relations, inclusion-exclusion principle, Polya's theory of counting, permanents, systems of distinct representatives, Latin

rectangles, block designs, finite projective planes, Steiner triple systems. Prerequisites: AK/AS/SC/MATH 2022 3.00 or AK/AS/SC/MATH 2222 3.00; six credits from 3000-level mathematics courses without second digit 5; or permission of the course coordinator.

Cross-listed to: AS/MATH 4160 3.00 and SC/MATH 4160 3.00

AS/SC/MATH 4170 6.00 Operations Research II. Selected topics from game theory, decision theory, simulation, reliability theory, queuing theory, non-linear programming, classification, pattern-recognition and prediction. Each chapter contains an optimization problem and methods and algorithms for solving it. The course is rich in examples. Prerequisites: AS/SC/MATH 2010 3.00 or AS/SC/MATH 2015 3.00 or AK/AS/SC/MATH 2310 3.00; AK/AS/SC/MATH 2030 3.00; AK/AS/SC/MATH 3170 6.00; or permission of the course coordinator. Degree credit exclusion: AS/MATH 4570 6.00.

Cross-listed to: AS/MATH 4170 6.00 and SC/MATH 4170 6.00

AK/MATH 4210 3.00 Complex Analysis. A rigorous development of the principal results of complex variable theory, including Taylor and Laurent series, the calculus of residues, the maximum modulus theorem and some special functions. Introduction to some more advanced topics. Prerequisite: AK/AS/SC/MATH 3410 6.00. Note: Not open to students who have taken AK/MATH 4210 6.00.

AS/SC/MATH 4230 3.00 Non-Parametric Methods in Statistics. Order statistics; general rank statistics; one-sample, two-sample and k-sample problems; Kolmogorov-Smirnov statistics; tests of independence and relative efficiencies. Prerequisite: AK/AS/SC/MATH 3131 3.00; AK/AS/SC/MATH 3132 3.00 is recommended but not required.

Cross-listed to: AS/MATH 4230 3.00 and SC/MATH 4230 3.00

GL/MATH 4230 6.00 Analyse Complexe. La topologie du plan complexe. Introduction aux fonctions holomorphes; applications conformes et applications linéaires fractionnelles. L'intégration complexe, la formule intégrale de Cauchy. La théorie des résidus. Les propriétés locales des fonctions holomorphes; les fonctions harmoniques. Prolongement analytique; le théorème de Riemann. Condition préalable : GL/MATH 1930 3.00 et GL/MATH 1940 3.00; GL/MATH 2670 6.00 ou la permission du département.

Language of Instruction: French

GL/MATH 4240 6.00 Analyse réelle. Ce cours est une étude rigoureuse de l'analyse réelle. Parmi les sujets traités figureront: les notions de base de topologie; limite et continuité, fonctions à variations bornées, l'intégrale de Riemann-Stieltjes, les suites et séries de fonctions, l'intégrale de Lebesgue; et éventuellement des séries de Fourier. Condition préalable : GL/MATH 2670 6.00 ou la permission du département.

Language of Instruction: French

AS/SC/MATH 4241 3.00 Applied Group Theory. Introduction to group theory and its applications in the physical sciences. Finite groups. Compact Lie groups. Representation theory, tensor representations of classical Lie groups, classification of semi-simple Lie groups. Prerequisites: AS/SC/MATH 2015 3.00; AK/AS/SC/MATH 2022 3.00 or AK/AS/SC/MATH 2222 3.00; AK/AS/SC/MATH 2270 3.00. Degree credit exclusion: AK/AS/SC/MATH 4020 6.00.

Cross-listed to: AS/MATH 4241 3.00 and SC/MATH 4241 3.00

AK/MATH 4260 3.00 Directed Reading. This course involves reading a standard book or recently published papers under supervision of a faculty member. May require preparation of a paper on the chosen topic. Students should contact the program Chair by April for the following fall/winter term. Prerequisite: 48 mathematics credits with an average grade of B, or, for students with equivalent preparation, permission of the Chair of mathematics. Note 1: Students must be accepted by a faculty supervisor before they can register in 4000-level directed reading courses. The course transaction form for such courses must be submitted with a note from the supervisor stating his/her willingness to perform this task. Permission of the program Chair is also required. Note 2: For either the bachelor or the Honours degree, no student may include more than one full reading course or equivalent in the program of study.

AK/MATH 4260 6.00 Directed Reading. This course involves reading a standard book or recently published papers under supervision of a faculty member. May require preparation of a paper on the chosen topic. Students should contact the program Chair by April for the following fall/winter term. Prerequisite: 48 mathematics credits with an average grade of B, or, for students with equivalent preparation, permission of the Chair of mathematics. Note 1: Students must be accepted by a faculty supervisor before they can register in 4000-level directed reading courses. The course transaction form for such courses must be submitted with a note from the supervisor stating his/her willingness to perform this task. Permission of the program Chair is also required. Note 2: For either the bachelor or the Honours degree, no student may include more than one full reading course or equivalent in the program of study.

AS/SC/MATH 4270 3.00 Integral Transforms and Equations. This course studies the Laplace, Fourier, Hankel and Mellin transforms; the solution of integral equations; and the treatment of asymptotic expansions. The applications are to problems in circuit theory, heat flow, elasticity, transport theory and scattering theory. Prerequisites: AK/AS/SC/MATH 2270 3.00; AK/AS/SC/MATH 3410 3.00. Prerequisite or corequisite: AS/SC/MATH 3271 3.00.

Cross-listed to: AS/MATH 4270 3.00 and SC/MATH 4270 3.00

AK/AS/SC/MATH 4271 3.00 Dynamical Systems. Iterations of maps and differential equations; phase portraits, flows; fixed points, periodic solutions and homoclinic orbits; stability, attraction, repulsion; Poincaré maps, transition to chaos. Applications: logistic maps, interacting populations, reaction kinetics, forced Van der Pol, damped Duffing and Lorenz equations. Prerequisites: AK/AS/SC/MATH 2270 3.00; AK/AS/SC/MATH 1021 3.00 or AK/AS/SC/MATH 2221 3.00 or AS/SC/MATH 1025 3.00.

Cross-listed to: AK/MATH 4271 3.00 and AS/MATH 4271 3.00 and SC/MATH 4271 3.00

AS/SC/MATH 4280 3.00 Risk Theory. Frequency and severity models in insurance, compound distributions, compound Poisson processes, ruin theory, non-proportional reinsurance, related topics in loss models and stochastic processes. Prerequisite: AK/AS/SC/MATH 2131 3.00.

Cross-listed to: AS/MATH 4280 3.00 and SC/MATH 4280 3.00

AS/SC/MATH 4400 6.00 The History of Mathematics. Selected topics in the history of mathematics, discussed in full technical detail but with stress on the underlying ideas, their evolution and their context. Prerequisites: 36 credits from mathematics courses without second digit 5, including at least 12 credits at or above the 3000 level. (12 of the 36 credits may be taken as corequisites.)

Cross-listed to: AS/MATH 4400 6.00 and SC/MATH 4400 6.00

AK/AS/SC/MATH 4430 3.00 Stochastic Processes. Basic Markov processes, including Markov chains, Poisson processes, birth-and-death processes, Brownian motion. Prerequisite: AK/AS/SC/MATH 2030 3.00. Corequisite: A mathematics course at the 3000 level or higher, without second digit 5.

Cross-listed to: AK/MATH 4430 3.00 and AS/MATH 4430 3.00 and SC/MATH 4430 3.00

AK/AS/SC/MATH 4431 3.00 Probability Models. This course introduces the theory and applications of several kinds of probabilistic models, including renewal theory, branching processes and martingales. Additional topics may include stationary processes, large deviations or models from the sciences. Prerequisite: AK/AS/SC/MATH 2030 3.00. Corequisite: A mathematics course at the 3000 level or higher, without second digit 5.

Cross-listed to: AK/MATH 4431 3.00 and AS/MATH 4431 3.00 and SC/MATH 4431 3.00

AS/MATH 4570 6.00 Applied Optimization. Topics chosen from decision theory, game theory, inventory control, Markov chains, dynamic programming, queuing theory, reliability theory, simulation, non-linear programming. Prerequisites: AK/AS/MATH 1550 6.00 and AK/AS/SC/MATH 2560 3.00 and AK/AS/SC/MATH 3170 6.00. Degree credit exclusion: AS/SC/MATH 4170 6.00.

AS/SC/MATH 4630 3.00 Applied Multivariate Statistical Analysis. The course covers the basic theory of the multivariate normal distribution and its application to multivariate inference about a single mean, comparison of several means and multivariate linear regression. As time and interest permit, further related topics may also be covered. Prerequisites: AK/AS/SC/MATH 3131 3.00; AS/SC MATH 3033 3.00 or AK/AS/SC/MATH 3330 3.00; AK/AS/SC/MATH 2022 3.00 or AK/AS/SC/MATH 2222 3.00.

Cross-listed to: AS/MATH 4630 3.00 and SC/MATH 4630 3.00

AS/SC/MATH 4730 3.00 Experimental Design. An examination of the statistical issues involved in ensuring that an experiment yields relevant information. Topics include randomized block, factorial, fractional factorial, nested, Latin square and related designs. Further topics as time permits. The emphasis is on applications. Prerequisite: AS/SC MATH 3033 3.00, or AK/AS/SC/MATH 3330 3.00, or permission of the course coordinator.

Cross-listed to: AS/MATH 4730 3.00 and SC/MATH 4730 3.00

AS/SC/MATH 4830 3.00 Time Series and Spectral Analysis. Treatment of discrete sampled data by linear optimum Wiener filtering, minimum error energy deconvolution, autocorrelation and spectral density estimation, discrete Fourier transforms and frequency domain filtering and the Fast Fourier Transform algorithm. Three lecture hours. One term. Three credits. Prerequisites: AK/AS/SC/COSC 1540 3.00 or equivalent FORTRAN programming experience; AS/SC/MATH 2015 3.00; AK/AS/SC/MATH 2270 3.00. Degree credit exclusions: AK/AS/SC/COSC 4242 3.00, AK/AS/SC/COSC 4451 3.00, AS/SC/MATH 4130B 3.00, AS/SC/MATH 4930C 3.00.

Cross-listed to: SC/EATS 4020 3.00 and AS/MATH 4830 3.00 and SC/MATH 4830 3.00 and SC/PHYS 4060 3.00

AS/SC/MATH 4930A 3.00 Topics in Applied Statistics: Statistical Quality Control. This course provides a comprehensive coverage of the modern practice of statistical quality control from basic principles to state-of-the-art concepts and applications. Prerequisite: AK/AS/SC/MATH 3330 3.00 or AS/SC/MATH 3033 3.00. Corequisite: AS/SC/MATH 4730 3.00.

Cross-listed to: AS/MATH 4930A 3.00 and SC/MATH 4930A 3.00

AS/SC/MATH 4930B 3.00 Topics in Applied Statistics: Simulation and the Monte Carlo Method. Introduction to systems, models, simulation and Monte Carlo methods. Random number generation. Random variate generation. Monte Carlo integration and variance reduction techniques. Applications to queuing systems and networks. Prerequisite: AK/AS/SC/MATH 3330 3.00 or AS/SC MATH 3033 3.00. Degree credit exclusion: AK/AS/SC/COSC 3408 3.00.

Cross-listed to: AS/MATH 4930B 3.00 and SC/MATH 4930B 3.00

McLaughlin College – Arts

Academic Program Office:

237 McLaughlin College, 416-736-5128

Web Address:

<http://www.yorku.ca/mclaughlin/>

College Master:

I. Greene

Academic Adviser:

T. Conlin

Listed below are the 1000-level and 2000-level nine-credit foundations courses which are part of the Faculty of Arts general education requirement. These courses introduce students to interdisciplinary study and emphasize critical thinking, reading and writing skills at the university level, and reflect the academic mandate of the college.

AS/HUMA 1825 9.00 Law and Morality. This course examines aspects of the relationships between law and morality. Questions include: What is law? What is morality? How do they overlap, and how are they different? Should the law enforce morality? How do these issues affect our daily lives? (This course is affiliated with McLaughlin College.)

AS/HUMA 1950 9.00 Concepts of Male and Female in the West. An examination of the origins of, and the interrelationships among, gender, male and female concepts and roles through myth, literature, art and artifacts from various Western cultures, past and present. (This course is affiliated with McLaughlin College.) Degree credit exclusion: AS/HUMA 1950 6.00.

AS/HUMA 2960 9.00 The Body in Western Culture. From an interdisciplinary perspective this course explores the attitudes of Western culture to the body and to entities such as soul, spirit and mind which have been contrasted with it. (This course is affiliated with McLaughlin College.)

AS/SOSC 1130 9.00 International Migration. This course examines why people leave their native lands and what becomes of them in countries to which they migrate, with particular reference to the impact of the immigration of the host country, using Canadian examples. (This course is affiliated with McLaughlin College.) Degree credit exclusions: AS/GEOG 2310 6.00, AS/SOSC 1130 6.00, AS/SOSC 1139 9.00, AK/SOSC 2000 6.00.

AS/SOSC 1140 9.00 Self, Culture and Society. The course concerns the development of concepts of culture by which individuals seek to understand themselves and the world about them, using materials from anthropology, sociology and philosophy, and with the aim of developing a critique of our own situation. (This course is affiliated with McLaughlin College.) Degree credit exclusion: AS/SOSC 1140 6.00.

AS/SOSC 1188 9.00 Women's Roles. The intersection of gender and culture is considered, with emphasis on women's issues. We explore the role of women in Canada and elsewhere, assessing how nation and culture shape gender discourse, and we examine aboriginal issues at home and abroad. (This course is affiliated with McLaughlin College.)

AS/SOSC 1200 9.00 Canadian Problems. The conceptual framework that has been developed out of this experience is used to examine a number of contemporary problems, selected each year on the basis of their topicality and relevance to a comprehensive understanding of current Canadian public policy. (This course is affiliated with McLaughlin College.) Degree credit exclusion: AS/SOSC 1200 6.00.

AS/SOSC 1350 9.00 Women and the Law. This course explores the role of gender within the context of the legal system. Current issues that highlight the relationship between gender and law are examined by analyzing both legislation and case law. Topics include: divorce, rape and equal pay. (This course is affiliated with McLaughlin College.) Degree credit exclusion: AS/SOSC 1350 6.00.

AS/SOSC 1520 9.00 Markets and Democracy: The Development of Industrial Society. The development of industrial capitalism has entailed profound changes in ways of living. The course will consider the spread of the market economy, the industrialization of production and the associated transformation of social and political institutions and ideas. (This course is affiliated with McLaughlin College.) Degree credit exclusions: AS/SOSC 1520 6.00, AS/SOSC 2510 6.00.

AS/SOSC 1535 9.00 Societies and Economic Systems. This course examines the 20th century's two dominant economic systems: Western capitalism and eastern European socialism. It provides a comprehensive understanding of the theory and practice of both systems, and discusses movement between them. (This course is affiliated with McLaughlin College.)

AS/SOSC 1650 9.00 Introduction to Criminology. This course is an introduction to criminology through a critical investigation of the processes and structures that designate criminality and delinquency; the relationship between control and consent; the administration of justice, and; the contexts (cultural, political and economic) for legal contests. (This course is affiliated with McLaughlin College.) Degree credit exclusion: AS/SOCI 1011 6.00. Note: Students must achieve a grade of at least B (6.0) in this course (or equivalent) in order to be permitted to continue as a major in criminology, or to pursue additional criminology courses at the 2000, 3000 and 4000 levels. Under exceptional circumstances, non-majors who have not obtained a grade of at least B (6.0) may apply for special consideration to enrol in a criminology course for which AS/CRIM/SOSC 1650 9.00 (or

equivalent) is a prerequisite. This application should be made to the Criminology Program coordinator.

Cross-listed to: AS/CRIM 1650 9.00 and AS/SOSC 1650 9.00

AS/SOSC 2150 9.00 Families in Crisis: Issues of Health Environments and Poverty. This course examines the crisis of the contemporary family. We use the family therapy literature to examine the crisis within the family system; and we also use the critical perspectives of Marxism, psychoanalysis and feminism to understand the position of the family in the surrounding social world. (This course is affiliated with McLaughlin College.) Degree credit exclusions: AS/SOSC 2150 6.00, AS/SOCI 3660 6.00, AS/SOSC 3150 6.00.

AS/SOSC 2200 9.00 Sovereignty and Democracy: Canada in the New Global Economy. A critical assessment of the body of knowledge on Canada as it has developed in selected disciplines. Works of various scholars are examined to illustrate approaches used. (This course is affiliated with McLaughlin College.) Degree credit exclusion: AS/SOSC 2200 6.00.

Modes of Reasoning – Atkinson, Glendon

Atkinson:

Office:

School of Analytic Studies and Information Technology
2005 Technology Enhanced Learning Building, Tel: 416-736-5232, Fax:
416-736-5188, e-mail: sasit@yorku.ca

Coordinator of Philosophy:

S.B. Mallin

Professors:

S.B. Mallin, S.G. Shanker

Professor Emeritus:

H. Adelman

Associate Professor:

C. Duràn

Assistant Professor:

P. Kazan

Special Assistant Professor:

J. Saindon

Note: AK/MODR 1000-level courses are part of Atkinson's general education requirement. General education courses do not fulfill elective requirements.

The overall purpose of all modes of reasoning courses is to enable students to develop critical skills applicable to the analysis of texts, to arguments encountered in every day situations, and to concrete problems. The first half of every course will be devoted to learning analytical techniques. Use and misuse of language will be examined. Conceptual, factual and evaluative issues will be distinguished. The basic forms of reasoning, their uses and limits will be analyzed. Fallacies which are frequently found in ordinary discussion, academic texts, mass media, advertising etc. will be carefully studied. The avoidance of these fallacies and learning techniques of conceptual analysis will be a major concern of this half. The aim is to help students to reason correctly and to express themselves clearly and precisely in verbal and written form. The second half of each course will be concerned with putting into practice the techniques learned from the first half. Students will be given ample opportunity to apply their critical skills on concrete materials and practical issues. For this purpose different modes courses use examples drawn from different areas. The following courses reflect the difference in focus in the second half.

Note: Students are advised before registering in a course to consult the detailed course outlines on the Internet (<http://www.atkinson.yorku.ca/course/>). This is particularly important whenever two or more sections of a course are being offered in any particular session as important differences of emphasis may exist relating both to content and methodology.

Glendon:

Department Offices/Bureaux du département :

160-161 York Hall 416-487-6732

Chair of the Department/Directeur du département :

Y. Frenette

Professors/Professeurs titulaires :

A. Baudot, B.N. Olshen

Professors Emeriti/Professeurs émérites :

A. Sangster, Natural Science; S. Zimmerman, Natural Science

Associate Professors/Professeurs agrégés :

J.Couchman, A.D.J. Hopkins, B.B. Price, M.-F. Silver

Associate Professor Emeritus/Professeurs agrégés émérite :

D. Schiff, Natural Science

Assistant Professor/Professeur adjoint :

J. Martel

Students should consult the Glendon philosophy departmental mini-calendar (C221 York Hall, telephone 416-487-6733 for a complete list of modes of reasoning courses offered by the Philosophy Department. All modes of reasoning courses offered by the Philosophy Department have 17 as the first two numbers, e.g. GL/MODR 1710 6.00./Les étudiant(e)s doivent consulter le mini-annuaire du Département de philosophie (Pavillon York, C221, tél. : 416-487-6733 pour une liste complète des cours de logique offerts par le Département de philosophie. Tous les cours de logique offerts par le Département de philosophie commencent par les chiffres 17, par ex : GL/MODR 1710 6.00.

Note: Courses whose numbers have 1 or 2 as the first digit are open to first-year students.

N.B. : Les cours dont le numéro commence par le chiffre 1 ou 2 sont ouverts aux étudiants de première année.

Courses in Modes of Reasoning

GL/MODR 1610 3.00 Introduction to Statistical Methods I. This course covers the elements of probability theory and standard probability distributions, the measures and techniques used in descriptive statistics, principles of sampling and tests of significance. Prerequisite: OAC or Grade 12 mathematics.

Cross-listed to: GL/MATH 1610 3.00 and GL/MODR 1610 3.00 and GL/POLS 2610 3.00 and GL/SOCI 2610 3.00

GL/MODR 1620 3.00 Introductory Statistics II. This course covers the correlation and regression analysis, analysis of variance and parametric tests, and problem work emphasizing applications of statistics in the social sciences. Prerequisite: GL/MATH 1610 3.00 or permission of the instructor.

Cross-listed to: GL/MATH 1620 3.00 and GL/MODR 1620 3.00 and GL/POLS 2620 3.00 and GL/SOCI 2620 3.00

GL/MODR 1650 3.00 Elements of Discrete Mathematics. The logic of propositions; truth tables; valid arguments; logic circuits. Set operations; relations on sets; Boolean functions. Counting principles; permutations; combinations; inclusion-exclusion principle; binomial and multinomial coefficients. Recurrence relations of order one and two; mathematical induction. Prerequisites: At least one OAC mathematics credit or its equivalent, or permission of the instructor. Degree credit exclusions: GL/MATH 1630 3.00 and GL/MATH 1640 3.00.

Cross-listed to: GL/CSLA 1650 3.00 and GL/MATH 1650 3.00 and GL/MODR 1650 3.00

GL/MODR 1670 6.00 Fundamentals of Mathematics. Intended for the student whose (high school) mathematical background is either weak or incomplete, and designed to train and improve the logical and technical skills in the use of basic mathematics. Topics are chosen from basic algebra, linear, quadratic, polynomial, exponential, logarithmic and trigonometric functions, systems of equations, inequalities, probability, series and derivatives. Course equivalent: AK/MATH 1710 6.00. Degree credit exclusion: GL/MATH 1880 6.00(EN).

Cross-listed to: GL/ITEC 1670 6.00 and GL/MATH 1670 6.00 and GL/MODR 1670 6.00

AK/MODR 1710 6.00 Reasoning About Women and Sexism. Note: Not open to students who have taken AK/MODR 1700A 6.00.

GL/MODR 1711 6.00 Critical Thinking. An introduction to reasoning in the humanities. The focus is the presentation of issues and arguments in major texts and articles. The aim of the course is to develop the student's ability to read, write and think critically.

GL/MODR 1712 6.00 Thinking Straight. The aim of this course is to develop skills involved in reading and thinking critically. The focus is the examination and evaluation of arguments as they are presented in various readings. Note: Only one in the GL/MODR 17XX 6.00 series may be taken for credit.

GL/MODR 1714 6.00 Thinking and Writing Critically. This course focuses on the presentation and evaluation of arguments in natural language. Formal techniques are used where appropriate. Note: Only one in the GL/MODR 17XX 6.00 series may be taken for credit.

GL/MODR 1715 6.00 Reasoning and Philosophy. Philosophic debate with respect to the major philosophical questions to achieve answers to these questions. In the first part of this course, students will be introduced to different argument forms and formal systems of logic; in the second part, the positions taken by philosophers (from the 17th, 18th and 20th centuries) in answering the above questions will be critically assessed from the standpoint of the validity and soundness of their arguments.

GL/MODR 1716 6.00 Logique formelle et informelle. Le cours a pour but de faire apprécier à l'étudiant la nature et les limites de l'argumentation. Un texte élémentaire de logique sera utilisé comme livre de référence. Le cours poursuivra aussi une étude détaillée de textes choisis.

Language of Instruction: French

Cross-listed to: GL/LIN 1716 6.00 and GL/MODR 1716 6.00

GL/MODR 1717 6.00 Critical Thinking in Medical Ethics: The Problem of Cloning. The aim of this course is to develop skills in critical thinking through the study of elementary logic and argument analysis, and to use these skills to explore some of the most significant and pressing issues in medical ethics. Of the topics in medical ethics covered, the main focus will be on the ethical and scientific aspects of human cloning. Degree credit exclusion: GL/MODR 1701 6.00(EN) Fall/Winter 2002-2003.

AK/MODR 1730 6.00 Reasoning About Social Issues. The particular focus of this course is on the mass media concerning social issues, different positions taken on issues such as abortion, euthanasia, pornography, immigration etc. Typical examples are to be analyzed.

AK/MODR 1760 6.00 Reasoning About Morality and Values. This course uses examples drawn from areas of thought where value judgments are made. Different sections will stress different topics in ethics, aesthetics, religion or law.

AK/MODR 1770 6.00 Techniques of Persuasion. This course takes examples from the various modes of persuasion including advertising, propaganda and political argument.

GL/MODR 1925 3.00 The Elements of Logic for Computer Science. This course introduces the fundamental elements of formal logic and its applications in computer science. The subjects covered include: propositional logic, reasoning, automatic deduction, resolution, logic circuits, predicate logic, applications in programming logic. Degree credit exclusion: GL/COSC/MODR 2900 6.00.

Cross-listed to: GL/CSLA 1925 3.00 and GL/ITEC 1925 3.00 and GL/MATH 1925 3.00 and GL/MODR 1925 3.00

GL/MODR 1925 3.00 Éléments de logique pour l'informatique. Ce cours introduit les éléments fondamentaux de la logique formelle et ses applications en informatique. Les sujets abordés incluent: la logique des propositions, raisonnements, déduction automatique, résolution, circuits logiques, la logique des prédicats, applications dans la programmation logique. Cours incompatible: GL/COSC/MODR 2900 6.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 1925 3.00 and GL/ITEC 1925 3.00 and GL/MATH 1925 3.00 and GL/MODR 1925 3.00

GL/MODR 1927 3.00 Mathematical Structures for Computer Science. This course is designed to introduce and analyze some of the main mathematical topics related to Computer Science. The subjects covered include sets, relations, mathematical induction, congruences, groups, graphs and trees, Boolean algebra and computer circuits. Prerequisite: GL/MATH 1650 3.00. Degree credit exclusion: GL/COSC/MODR 2900 6.00.

Cross-listed to: GL/CSLA 1927 3.00 and GL/ITEC 1927 3.00 and GL/MODR 1927 3.00

GL/MODR 1930 3.00 Calculus I. This is a basic course in university calculus. Topics covered are functions, limits, continuity, differentiation, curve sketching, maximization and minimization problems for functions of one variable, the Riemann integral and antiderivatives. Prerequisite: At least one OAC mathematics credit or permission of the department.

Cross-listed to: GL/MATH 1930 3.00 and GL/MODR 1930 3.00

GL/MODR 1930 3.00 Calcul différentiel et intégral I. Ce cours est le premier cours de base de mathématiques de niveau universitaire. Les notions traitées sont : les fonctions, les limites, la continuité, la différentiation, le graphe des fonctions, les problèmes de maximisation et de minimisation de fonctions d'une variable, l'intégrale de Riemann et les primitives. Condition préalable : au moins un crédit en mathématiques CPO ou permission du département.

Language of Instruction: French

Cross-listed to: GL/MATH 1930 3.00 and GL/MODR 1930 3.00

GL/MODR 1940 3.00 Calculus II. A continuation of Calculus I. Topics covered are logarithms and exponentials, trigonometry including inverse trigonometric functions, hyperbolic trigonometry, the techniques of integration, indeterminate forms and l'Hôpital Rule, an introduction to sequences and series. Applications of the integral to the calculation of areas, volumes, work. Prerequisite: GL/MATH 1930 3.00.

Cross-listed to: GL/MATH 1940 3.00 and GL/MODR 1940 3.00

GL/MODR 1940 3.00 Calcul différentiel et intégral II. La suite de Calcul différentiel et intégral I. Les notions traitées sont : les logarithmes et exponentielles, la trigonométrie y compris les fonctions trigonométriques inverses, la trigonométrie hyperbolique, les techniques d'intégration, les formes indéterminées et la règle de l'Hôpital, une introduction aux suites et séries. Applications de l'intégrale aux calculs des aires, des volumes et du travail. Condition préalable : GL/MATH 1930 3.00.

Language of Instruction: French

Cross-listed to: GL/MATH 1940 3.00 and GL/MODR 1940 3.00

GL/MODR 1960 3.00 Introduction to Computer Usage I. An introduction to computers and their applications for students with no previous background in the subject. Concepts of both hardware and software are discussed, and students are introduced to standard microcomputer-based applications packages. Degree credit exclusion: GL/COSC/MODR/SOSC 1960 6.00.

Cross-listed to: GL/CSLA 1960 3.00 and GL/MODR 1960 3.00 and GL/SOSC 1960 3.00

GL/MODR 1960 3.00 Introduction à l'application des ordinateurs I. Ce cours a pour but d'initier les étudiants à l'application des ordinateurs. On y enseignera les unités matérielles et fonctionnelles de l'ordinateur. On apprendra aussi un système d'exploitation et un nombre de logiciels qui sont populaires sur les micro-ordinateurs. Cours incompatible : GL/COSC/MODR/SOSC 1960 6.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 1960 3.00 and GL/MODR 1960 3.00 and GL/SOSC 1960 3.00

GL/MODR 1970 3.00 Introduction to Computer Usage II. Topics studied include information systems development and database processing, and a survey of common programming languages, including fourth generation languages and object oriented languages. Students will

be introduced to programming in a high level language. The course will conclude with a discussion of some of the economic and social issues surrounding computerization. Prerequisite: GL/COSC 1960 3.00. Degree credit exclusion: GL/COSC/MODR/SOSC 1960 6.00.

Cross-listed to: GL/CSLA 1970 3.00 and GL/MODR 1970 3.00 and GL/SOSC 1970 3.00

GL/MODR 1970 3.00 Introduction à l'application des ordinateurs II. Ce cours introduit le développement de systèmes d'information et la gestion de base de données. On apprendra la structure et la conception des algorithmes et la programmation en langage de haut niveau. Le cours présente aussi les répercussions économiques et sociales des microprocesseurs. Condition préalable : GL/COSC 1960 3.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 1970 3.00 and GL/MODR 1970 3.00 and GL/SOSC 1970 3.00

AK/MODR 2410 3.00 Critical Reasoning. A systematic study of practical argument, the analysis of techniques, formal and informal fallacies, the relationship between arguing well and winning an argument. When is argument propaganda? Methods of identifying and undermining specious arguments will be explored and tried.

Cross-listed to: AK/MODR 2410 3.00 and AS/PHIL 2200 3.00

GL/MODR 2630 6.00 Probability and Mathematical Statistics I. Topics include probability spaces, conditional probability, independence, random variables and vectors, expectation and moments, moment-generating functions, classical discrete and continuous distributions, laws of large numbers, central limit theorem, introduction to sampling, sufficiency, point estimation, confidence intervals, hypothesis testing, regression and correlation. Prerequisites or corequisites: GL/MATH 1930 3.00 and GL/MATH 1940 3.00.

Cross-listed to: GL/MATH 2630 6.00 and GL/MODR 2630 6.00

GL/MODR 2640 6.00 Logic. This course is an introduction to the basic concepts and techniques of modern logic. No previous course in logic or philosophy is required.

Cross-listed to: GL/LIN 2640 6.00 and GL/MODR 2640 6.00 and GL/PHIL 2640 6.00

GL/MODR 2650 3.00 Linear Algebra I. This is a basic mathematics course as well as a very useful course for someone who wishes to do applied research in the social sciences. Among the topics considered are vectors, bases, matrices, systems of linear equations, rank and determinants. Some applications of linear algebra to various other disciplines, such as economics, are also included. Prerequisite: GL/MATH 1940 3.00 or equivalent or permission of the department.

Cross-listed to: GL/MATH 2650 3.00 and GL/MODR 2650 3.00

GL/MODR 2650 3.00 Algèbre linéaire I. Algèbre linéaire est un cours de base des mathématiques qui sert également aux étudiants en sciences sociales. Les sujets traités comprendront les vecteurs, les équations linéaires, le rang et le déterminant, avec des applications. Condition préalable : GL/MATH 1940 3.00.

Language of Instruction: French

Cross-listed to: GL/MATH 2650 3.00 and GL/MODR 2650 3.00

GL/MODR 2660 3.00 Linear Algebra II. This is a continuation of Linear Algebra I. More about vectors spaces, subspaces, linear transformations. Eigenvalues, eigenvectors, similarity, diagonalization. Positive definite quadratic forms. Inner product spaces and Gram-Schmidt orthogonalization. Prerequisite: GL/MATH 2650 3.00.

Cross-listed to: GL/MATH 2660 3.00 and GL/MODR 2660 3.00

GL/MODR 2660 3.00 Algèbre linéaire II. Ce cours est la suite du cours GL/MATH 2650 3.00. Les sujets traités comprendront les espaces vectoriels, les sous espaces, les applications linéaires, les vecteurs propres, les changements de base, la diagonalisation ainsi que les formes quadratiques positives. Condition préalable : GL/MATH 2650 3.00.

Language of Instruction: French

Cross-listed to: GL/MATH 2660 3.00 and GL/MODR 2660 3.00

GL/MODR 2670 6.00 Second Year Calculus. Numerical series and power series, vector algebra and calculus (with applications to curves, and motions along curves in two and three dimensions). Functions of several variables, including partial differentiation, properties of surfaces, tangent lines and planes, and the problem of finding maximum and minimum values for such functions (with or without constraining side conditions). The rest of the course is devoted to double and triple integrals, line integrals and surface integrals and some elementary differential equations. Prerequisite: GL/MATH 1940 3.00.

Cross-listed to: GL/MATH 2670 6.00 and GL/MODR 2670 6.00

GL/MODR 2680 6.00 Mathematics of Investment and Actuarial Science. This course is part of the Mathematics for Commerce Program. Simple and compound interest with applications to calculations of mortgage payments, yields on bonds, interest paid on instalment loans. Depreciation, capitalization, annuities and continuous interest. Mathematical theory of interest with applications to life annuities and life insurance. Prerequisites or corequisites: GL/MATH 1930 3.00 and GL/MATH 1940 3.00.

Cross-listed to: GL/MATH 2680 6.00 and GL/MODR 2680 6.00

GL/MODR 2680 6.00 Les mathématiques de l'investissement et de l'actuariat. Théorie de l'intérêt (simple, composé et continu). Calculs d'hypothèques, de rendements d'obligations, d'amortissement et de remboursement de prêts. Théorie de la dépréciation et de la capitalisation des biens. L'assurance-vie et les rentes viagères. Les primes et les tables de mortalité. Condition préalable ou concomitante : GL/MATH 1930 3.00 et GL/MATH 1940 3.00.

Language of Instruction: French

Cross-listed to: GL/MATH 2680 6.00 and GL/MODR 2680 6.00

GL/MODR 2690 3.00 Cours de logique intermédiaire. Ce cours fait suite au cours de Logique formelle et informelle. Après une brève revue des règles de déduction matérielle, nous aborderons, entre autres sujets, les règles de quantification, l'étude des systèmes axiomatiques, les preuves de complétude et de consistance etc. Nous amorcerons, Deo volente, une introduction à la logique inductive.

Language of Instruction: French

Cross-listed to: GL/LIN 2690 3.00 and GL/MODR 2690 3.00 and GL/PHIL 2690 3.00

GL/MODR 3650 6.00 Modern Algebra. Introduction to the basic algebraic structures, including groups, rings and fields, Polynomial rings and the field of rational functions. Complex numbers. Field extensions and the elements of Galois Theory. Factorization theory and ideals in rings, with applications to topics in number theory. Prerequisite: GL/MATH 2660 3.00 or permission of the department.

Cross-listed to: GL/MATH 3650 6.00 and GL/MODR 3650 6.00

GL/MODR 3650 6.00 Algèbre moderne. Introduction aux structures algébriques. La théorie des groupes; éléments de la théorie des anneaux et des corps. L'anneau des polynômes et le corps des fonctions rationnelles. Les nombres complexes. Les extensions d'un corps et les éléments de la théorie de Galois. Factorisation dans un anneau; les idéaux; applications à la théorie des nombres. Condition préalable : GL/MATH 2660 3.00 ou la permission du département.

Language of Instruction: French

Cross-listed to: GL/MATH 3650 6.00 and GL/MODR 3650 6.00

GL/MODR 3660 6.00 Recherche opérationnelle. Le cours explore la programmation linéaire. On y étudie la méthode du simplexe et la théorie de la dualité ainsi que l'algorithme de la transportation avec applications aux problèmes des réseaux, du partage et de l'itinéraire le plus court. On se penche, enfin, sur les problèmes de l'arbre engendrant minimal et du flux maximal. Condition préalable : GL/MATH 2650 3.00.

Language of Instruction: French

Cross-listed to: GL/MATH 3660 6.00 and GL/MODR 3660 6.00

GL/MODR 3670 3.00 Mathematical Statistics. Elements of probability, random variables, probability distribution, sampling theory, theory of estimation and tests of hypotheses and regression analysis. Prerequisites: GL/MODR 1930 3.00 and GL/MODR 1940 3.00.

Cross-listed to: GL/ECON 3670 3.00 and GL/MODR 3670 3.00

GL/MODR 3905 3.00 Descartes and the Reform of the Sciences. Descartes is acknowledged as the founder of the modern outlook in the sciences. This course attempts to assess this judgement through a study of his major works, both philosophical and scientific.

Cross-listed to: GL/HUMA 3905 3.00 and GL/MODR 3905 3.00 and GL/PHIL 3905 3.00

GL/MODR 3910 3.00 Philosophy of Language. The course will introduce students to such topics as the nature of reference, the role of intention and convention in determining meaning, the distinctions between syntax, semantics and pragmatics, the theory of speech acts, and the nature of metaphor and other figurative language.

Cross-listed to: GL/LIN 3910 3.00 and GL/MODR 3910 3.00 and GL/PHIL 3910 3.00

GL/MODR 3931 3.00 Philosophy of Religion. A course designed with the purpose of studying certain specific areas in the philosophy of religion, namely, the nature of religious language, the possibility of a natural theology and the connection (if any) between theology and morality.

Cross-listed to: GL/HUMA 3931 3.00 and GL/MODR 3931 3.00 and GL/PHIL 3931 3.00

GL/MODR 4625 3.00 Philosophical Paradoxes. A study of rationality in belief and action approached through the paradoxes which each presents. We are also interested in the sort of reasoning which generates paradoxes, and what is required to resolve them. Topics include: The Prediction Paradox, Newcomb's Problem and the Prisoner's Dilemma. Degree credit exclusions: GL/PHIL 3015 3.00 (Fall /Winter 1990-1991, Fall/Winter 1991-1992), GL/PHIL 3013 3.00 (Fall/Winter 1992-1993).

Cross-listed to: GL/MODR 4625 3.00 and GL/PHIL 4625 3.00

GL/MODR 4630 3.00 Gender, Responsibility and Dilemmas in the Law. This course examines family identity in the law, the obligations of judges and issues connected with free speech, looking more closely at negative and positive freedom, as they bear on the Charter of Rights and Freedoms. Degree credit exclusions: GL/PHIL/SOSC 4011 3.00 (Fall/Winter 2001-2002); GL/PHIL/SOSC 4011 3.00 (Fall/Winter 2002-2003).

Cross-listed to: GL/MODR 4630 3.00 and GL/PHIL 4630 3.00

Music – Atkinson, Fine Arts

Atkinson:

Office:

School of Arts and Letters
625 Atkinson Building, Tel: 416-736-5900, Fax: 416-736-5766, e-mail:
aksal@yorku.ca

Fine Arts:

Department Office:

225 Winters College, 416-736-5186

Chair of the Department:

M. Coghlan

Professors:

D. Mott, C. Petrowska-Quillico, T. Sankaran

Professors Emeriti:

A. Clarkson, J. Tenney

Associate Professors:

R. Bowman, M. Coghlan, D. de Val, D. Lidov, C. Sokol, P. Wait,
R. Witmer

Associate Professors Emeriti:

R.S. Beckwith, J. Gittens, P. Sampson, P. Werren

Assistant Professors:

B. Elmes, M. Marcuzzi, S. Martin, S. Otto, C. Robbin, R. Simms,
S. Viswawathan, W. Westcott, L. Wrazen

Faculty of Fine Arts

The mandate of our students and faculty is to make and share music and to acquire, develop and disseminate musical knowledge. We understand musical study as interacting with nearly all studies pursued in the University — those of the humanities and the other fine arts, the social and natural sciences and the professions. From its inception, the Music Department has emphasized the study and performance of contemporary music in all its diversity, while bringing to bear a wide range of historical and social perspectives on the music of other times and places.

Students who major in music may pursue the BA, the BA Honours or BFA Honours degree. These degree options address both academic and practical concerns, combining the knowledge and skills needed for professional work in music with experience that will stimulate lifelong musical and personal growth. Undergraduate studies include courses in performance, composition, music history and ethnology, theory and pedagogy, with the emphasis largely depending on the student's own interests and abilities. Many of these courses are open to non-majors, with opportunities for participation in various performances and musical events on and off campus organized by members of the department.

Both the BA Honours and BFA Honours degree programs comprise a total of 120 credits and may be completed in four years of full-time study or over a longer period of part-time study. The major Program in Music may be combined with a second major in the Faculty of Arts, or with a minor in the Faculties of Arts, Environmental Studies, Fine Arts or Pure and Applied Science. A five-year program leading to two degrees (the BA Honours or BFA Honours in music and the bachelor of education degree) is also available. A minor in music may be pursued by qualified honours degree students in the Faculties of Arts, Environmental Studies, Fine Arts or Pure and Applied Science. Students may apply to the BA (90-credit) degree in music at the end of their first year of study. Completion of this degree forms a strong basis for further studies in fields such as music therapy, arts administration and management, music journalism, music marketing, cultural tourism, community arts and cultural management. For students interested in teaching at the primary, junior and intermediate levels, a BA and a BEd can be completed in four years, rather than five, as currently with the BA or BFA Honours.

Admission to the department is by audition. Further information on audition evaluations, admissions, degree requirements and Faculty of Fine Arts regulations may be found in the Faculty of Fine Arts section of this Calendar.

In the area of performance, a qualified student may select one or more of a number of courses including chamber ensembles in Western art music (piano, percussion, winds, strings, voice, guitar), jazz, world music ensembles and contemporary music both notated and improvised. Each course entails ensemble workshops, study of the history and literature of the instruments, and attention to individual problems of performance. Performance experience in large ensembles is provided by the choir, jazz orchestra, jazz choir, wind symphony and world music chorus.

In the area of composition, instruction is given in the skills of writing in score, arranging and orchestration. In addition, fully equipped digital and MIDI studios provide facilities for learning all phases of the composition and production of music.

In the area of musical research (music history, area studies and ethnomusicology), the aim is to integrate musicianship with the history, theory and anthropology of music. Intensive study may be pursued in the musics of Asia and the Americas as well as of Europe, past and present.

All music majors complete a sequence of foundational courses which equips them with essential concepts and practical skills in ear-training, sight-singing, rhythm, theory and awareness of the social, cultural and historical contexts of music. These requirements include FA/MUSI 1000 6.00, FA/MUSI 1200 9.00, FA/MUSI 2200 6.00, FA/MUSI 2201 3.00 and FA/MUSI 2202 3.00. A student may be exempted from one or more of those courses by passing proficiency exams; otherwise, students who do not maintain enrolment in the foundation courses scheduled for their first and second years may not be enrolled in performance and/or composition courses. These foundation courses are prerequisite for all the

department's upper-level offerings for majors, and both full and part-time students must complete them within their first 60 credits. All Honours music majors must complete 30 upper-level music credits (at or above the 3000 level), including at least 18 credits in studies courses for the BA Honours degree, and at least 12 credits in studies courses and at least 12 credits in studio courses for the BFA Honours degree. (See the lists of courses below.)

In addition to courses in music, the Bachelor's, BA Honours and BFA Honours degrees require 18 general education credits, and 12 credits from other departments in fine arts.

For degree credit, music courses are classified as follows:

Non-Major Courses (not open to music majors or minors)

FA/MUSI 1510 6.00, FA/MUSI 1520 6.00, FA/MUSI 1530 6.00, FA/MUSI 1540 6.00, FA/MUSI 1550 6.00. (In addition, many of the courses listed below are available to non-majors.)

Foundation Courses

FA/MUSI 1000 6.00, FA/MUSI 1200 9.00, FA/MUSI 2200 6.00, FA/MUSI 2201 3.00, FA/MUSI 2202 3.00. (All other 1000- and 2000-level music courses are counted as electives.)

Upper-Level Studies Courses

FA/MUSI 3000 6.00, FA/MUSI 3059 6.00, FA/MUSI 3081 3.00, FA/MUSI 3201 3.00, FA/MUSI 3202 3.00, FA/MUSI 3220 3.00, FA/MUSI 3300 6.00, FA/MUSI 3310 6.00, FA/MUSI 3320 6.00, FA/MUSI 3340 6.00, FA/MUSI 3350 6.00, FA/MUSI 3360 6.00, FA/MUSI 3370 3.00, FA/MUSI 3380 3.00, FA/MUSI 3460 3.00, FA/MUSI 3470 3.00, FA/MUSI 4059 6.00, FA/MUSI 4081 3.00, FA/MUSI 4200 3.00, FA/MUSI 4300 3.00, FA/MUSI 4320 3.00, FA/MUSI 4370 3.00, FA/MUSI 4399 3.00, FA/MUSI 4590 3.00/4590 6.00, FA/MUSI 4600 6.00.

Upper-Level Studio Courses

FA/MUSI 3000 6.00, FA/MUSI 3010 6.00, FA/MUSI 3020 3.00, FA/MUSI 3022 3.00, FA/MUSI 3024 3.00, FA/MUSI 3025 3.00, FA/MUSI 3026 3.00, FA/MUSI 3028 3.00, FA/MUSI 3029 6.00, FA/MUSI 3031 6.00, FA/MUSI 3032 6.00, FA/MUSI 3040 6.00, FA/MUSI 3041 6.00, FA/MUSI 3042 3.00, FA/MUSI 3043 3.00, FA/MUSI 3044 3.00, FA/MUSI 3045 3.00, FA/MUSI 3046 3.00, FA/MUSI 3047 3.00, FA/MUSI 3048 3.00, FA/MUSI 3049 3.00, FA/MUSI 3051 6.00, FA/MUSI 3052 3.00, FA/MUSI 3053 3.00, FA/MUSI 3054 3.00, FA/MUSI 3059 6.00, FA/MUSI 3070 3.00/3070 6.00, FA/MUSI 3071 3.00, FA/MUSI 3080 3.00/3080 6.00, FA/MUSI 3082 3.00, FA/MUSI 3090 3.00, FA/MUSI 3091 3.00, FA/MUSI 3092 3.00, FA/MUSI 3093 3.00, FA/MUSI 3094 3.00, FA/MUSI 3095 3.00, FA/MUSI 3099 3.00/3099 6.00, FA/MUSI 3110 6.00, FA/MUSI 3120 3.00, FA/MUSI 3131 3.00, FA/MUSI 3132 3.00, FA/MUSI 3140 6.00, FA/MUSI 3201 3.00, FA/MUSI 3202 3.00, FA/MUSI 3210 6.00, FA/MUSI 3240 6.00, FA/MUSI 3450 3.00, FA/MUSI 3460 3.00, FA/MUSI 3900 3.00/3900 6.00, FA/MUSI 4020 3.00, FA/MUSI 4024 3.00, FA/MUSI 4025 3.00, FA/MUSI 4026 3.00, FA/MUSI 4028 3.00, FA/MUSI 4029 6.00, FA/MUSI 4031 6.00, FA/MUSI 4032 6.00, FA/MUSI 4040 6.00, FA/MUSI 4041 6.00, FA/MUSI 4042 3.00, FA/MUSI 4043 3.00, FA/MUSI 4044 3.00, FA/MUSI 4045 3.00, FA/MUSI 4046 3.00, FA/MUSI 4047 3.00, FA/MUSI 4048 3.00, FA/MUSI 4049 3.00, FA/MUSI 4051 6.00, FA/MUSI 4052 3.00, FA/MUSI 4053 3.00, FA/MUSI 4054 3.00, FA/MUSI 4059 6.00, FA/MUSI 4070 3.00/4070 6.00, FA/MUSI 4080 3.00/4080 6.00, FA/MUSI 4082 3.00, FA/MUSI 4090 3.00, FA/MUSI 4091 3.00, FA/MUSI 4092 3.00, FA/MUSI 4093 3.00, FA/MUSI 4094 3.00, FA/MUSI 4095 3.00, FA/MUSI 4099 3.00/4099 6.00, FA/MUSI 4110 6.00, FA/MUSI 4140 6.00, FA/MUSI 4150 6.00, FA/MUSI 4200 3.00, FA/MUSI 4590 3.00/4590 6.00, FA/MUSI 4900 3.00.

Note: Some courses involve additional ancillary fees. Consult the department's supplementary calendar for details.

Courses in Music

FA/MUSI 1000 6.00 Workshop in Musicianship I. An intensive course designed to develop musical sensitivity, imagination and practical skills, through a variety of individual exercises in singing, playing, composing and listening. Four hours plus self study in the computer lab. Limited to music majors and minors and required of all new majors. Available to students in fine arts cultural studies by entrance examination.

FA/MUSI 1020A 3.00 Classical Performance: Flute. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00 or FA/MUSI 1026 3.00.

FA/MUSI 1020A 6.00 Classical Performance: Flute. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00 or FA/MUSI 1026 3.00.

FA/MUSI 1020B 3.00 Classical Performance: Oboe. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00 or FA/MUSI 1026 3.00.

FA/MUSI 1020B 6.00 Classical Performance: Oboe. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00 or FA/MUSI 1026 3.00.

FA/MUSI 1020C 3.00 Classical Performance: Clarinet. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00 or FA/MUSI 1026 3.00.

FA/MUSI 1020C 6.00 Classical Performance: Clarinet. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00 or FA/MUSI 1026 3.00.

FA/MUSI 1020D 3.00 Classical Performance: Bassoon. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00 or FA/MUSI 1026 3.00.

FA/MUSI 1020D 6.00 Classical Performance: Bassoon. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00 or FA/MUSI 1026 3.00.

FA/MUSI 1020E 3.00 Classical Performance: Saxophone. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00 or FA/MUSI 1026 3.00.

FA/MUSI 1020E 6.00 Classical Performance: Saxophone. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00 or FA/MUSI 1026 3.00.

FA/MUSI 1020F 3.00 Classical Performance: French Horn. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020F 6.00 Classical Performance: French Horn. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020G 3.00 Classical Performance: Trumpet. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020G 6.00 Classical Performance: Trumpet. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020H 3.00 Classical Performance: Trombone. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020H 6.00 Classical Performance: Trombone. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020I 3.00 Classical Performance: Tuba. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020I 6.00 Classical Performance: Tuba. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020J 3.00 Classical Performance: Percussion. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020J 6.00 Classical Performance: Percussion. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020L 3.00 Classical Performance: Guitar. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020L 6.00 Classical Performance: Guitar. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020M 3.00 Classical Performance: Voice. This course provides instruction in vocal performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020M 6.00 Classical Performance: Voice. This course provides instruction in vocal performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020N 3.00 Classical Performance: Violin. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020N 6.00 Classical Performance: Violin. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020O 3.00 Classical Performance: Viola. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020O 6.00 Classical Performance: Viola. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020P 3.00 Classical Performance: Cello. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020P 6.00 Classical Performance: Cello. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020Q 3.00 Classical Performance: Double Bass. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020Q 6.00 Classical Performance: Double Bass. This course provides instruction in instrumental performance. Prerequisite: Permission of the instructor, by audition. Corequisite: FA/MUSI 1024 3.00 or FA/MUSI 1025 3.00.

FA/MUSI 1020R 3.00 Classical Performance: Harp. Students receive private harp lessons. Corequisite: Enrolment in a major ensemble.

FA/MUSI 1020R 6.00 Classical Performance: Harp. Students receive private harp lessons. Corequisite: Enrolment in a major ensemble.

FA/MUSI 1020S 3.00 Classical Performance: Euphonium. Students receive private euphonium lessons. Corequisite: Enrolment in a major ensemble.

FA/MUSI 1020S 6.00 Classical Performance: Euphonium. Students receive private euphonium lessons. Corequisite: Enrolment in a major ensemble.

FA/MUSI 1022 3.00 York University Women's Chorus. This course is open to all qualified York University students. The York University Women's Chorus performs repertoire written especially for soprano and also voice ranges, and presents several concerts annually. Open to non-majors. Prerequisite: Permission of the course director, by audition.

FA/MUSI 1024 3.00 York University Concert Choir. This course is open to all qualified York University students and offers performance training in the environment of a large choir. Prerequisite: Permission of the course director, by audition.

FA/MUSI 1025 3.00 York University Wind Symphony. This course is open to all qualified York University students and offers performance training in the environment of a large ensemble. Prerequisite: Permission of the course director, by audition.

FA/MUSI 1026 3.00 Orchestra. This course is open to all qualified York University students and offers performance training in the environment of a large ensemble. Prerequisite: Permission of the course director, by audition.

FA/MUSI 1028B 3.00 York Brass Ensemble. This course provides training and experience in the performance of chamber music. Corequisite: FA/MUSI 1020B 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 1028G 3.00 York Guitar Ensemble. This course provides training and experience in the performance of chamber music. Corequisite: FA/MUSI 1020G 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 1028P 3.00 York Percussion Ensemble. This course provides training and experience in the performance of chamber music. Corequisite: FA/MUSI 1020P 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 1028S 3.00 York Chamber Strings. This course provides training and experience in the performance of chamber music. Corequisite: FA/MUSI 1020S 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 1028W 3.00 York Woodwind Ensemble. This course provides training and experience in the performance of chamber music. Corequisite: FA/MUSI 1020W 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 1029 3.00 Vocal Diction I. Examines diction as it relates to performance within the tradition of classical voice. Students will receive practical instruction in classical vocal pronunciation, diction, articulation and correct vowel formation with an aim to developing the linguistic fluency and foreign language competency necessary for the vocal art in the

Western classical tradition. Corequisite: Enrolment in FA/MUSI 1020M 3.00 or permission of the instructor.

FA/MUSI 1031 6.00 Piano Improvisation and Contemporary Styles. Designed for pianists of all backgrounds interested in exploring a variety of improvisational practices and 20th-century techniques and styles. Students learn to develop a compositional orientation to improvisation which allows the free exploration and integration of materials and processes from all periods and cultures. Admission is by audition in September. Open to non-majors. Prerequisites or corequisites: FA/MUSI 1000 6.00 or FA/MUSI 2000 6.00, and FA/MUSI 1200 6.00 or FA/MUSI 1200 9.00.

FA/MUSI 1032 6.00 Contemporary Musicianship and Improvisation. Designed to integrate musicianship training with work in composition and improvisation. Development of the skills, strategies and sensibilities required to achieve fluency in spontaneous solo and ensemble music making, and the development and refining of one's own musical voice are among the main course objectives. Admission is by audition in September. Prerequisites or corequisites: FA/MUSI 1000 6.00 or FA/MUSI 2000 6.00, and FA/MUSI 1200 6.00 or FA/MUSI 1200 9.00.

FA/MUSI 1042 3.00 Gamelan Orchestra. Group instruction in the technique and performance of Indonesian Gamelan repertoire. Rhythmic and melodic techniques are developed while performing on various gongs, metallophones, flutes, and drums of the Gamelan orchestra. Repertoire is memorized and ensemble performance practice is emphasized through public performance. Open to non-majors.

FA/MUSI 1043 3.00 West African Drum Ensemble. Practical instruction in the performance practice and repertoires of various West African cultures including Ewe, Dagamba, Mandinka and other Mande people. The songs and basic dance movements integral to these traditions will also be studied. Open to non-majors.

FA/MUSI 1044 3.00 Celtic Canadian Folk Ensemble. Practical instruction in several vernacular fiddle-based musical traditions of North America. Some knowledge of fiddle, guitar, piano, harmonica or tin whistle is an asset. Prerequisite: Permission of the course director. No prior experience is necessary. Open to non-majors.

FA/MUSI 1045 3.00 Klezmer Folk Ensemble. Practical performance instruction in the Klezmer musical tradition. Some knowledge of fiddle, guitar, piano or clarinet required. The course develops facility and repertoire in the improvisational styles associated with the Klezmer (Jewish Wedding Band) tradition of central Europe and the Middle East. Prerequisite: Permission of the course director. No prior experience is necessary. Open to non-majors.

FA/MUSI 1046 3.00 African-American Musics: Ragtime, Blues, Boogie-Woogie and Barrelhouse Piano. Practical performance instruction in the African-American traditions of ragtime, blues, barrelhouse, boogie-woogie and stride piano styles. Students develop manual independence, rhythmic security, improvisation skills and stylistic awareness using repertoire chosen from the tradition. Both aural sources and written scores are consulted and used to recreate the music. Prerequisite: Permission of the course director. Open to non-majors with appropriate skill level in piano playing.

FA/MUSI 1047 3.00 Chinese Classical Ensemble. Practical and repertoire studies in traditional Chinese orchestral techniques (chin, erhu etc.). Open to non-majors.

FA/MUSI 1048 3.00 Japanese Music. Practical and repertoire studies in traditional instrumental techniques (shakuhachi, koto etc.) Students concentrate on issues of performance such as tone colour, rhythmic accuracy and nuance and ensemble performance. Open to non-majors.

FA/MUSI 1049 3.00 Cuban Music. A performance oriented course dealing primarily with Cuban popular music styles. An in depth examination of various Afro-Cuban traditional musics, which have had important influence on the popular styles, will also be presented. Open to non-majors.

FA/MUSI 1050 6.00 Introduction to Jazz Performance. Improvisation and ensemble playing in the jazz idiom, intended for students with instrumental proficiency and musical literacy, and some experience in jazz performance. Prerequisites: Permission of the instructors, by audition. Open to non-majors. Prerequisites or corequisites: FA/MUSI 1000 6.00 or FA/MUSI 2000 6.00, and FA/MUSI 1200 6.00 or FA/MUSI 1200 9.00.

FA/MUSI 1051 6.00 Jazz Workshop I. A systematic approach to improvising, and ensemble playing in the jazz idiom. The course is designed primarily for students with instrumental proficiency and basic experience in small group jazz performance and/or jazz theory. Hours vary. Prerequisite: Permission of the course director, by audition. Open to non-majors. Prerequisites or corequisites: FA/MUSI 1000 6.00 or FA/MUSI 2000 6.00, and FA/MUSI 1200 6.00 or FA/MUSI 1200 9.00.

FA/MUSI 1052 3.00 Jazz Orchestra I. The York Jazz Orchestra performs traditional and contemporary jazz for large ensembles, including student compositions as well as music by noted jazz composers. Prerequisite: Permission of the course director, by audition. Open to non-majors. Note: The Jazz Orchestra meets from September to April.

FA/MUSI 1053 3.00 Jazz Choir I. This course provides instruction in jazz choral techniques and emphasizes the development of vocal performance skills within the jazz tradition. Prerequisite: Permission of the course director, by audition. Note: The Jazz Choir meets from September to April.

FA/MUSI 1054A 3.00 Jazz Piano. This course focuses on performance dealing primarily with the tradition of jazz piano in both its solo and ensemble forms. Practical instruction in jazz piano performance includes an emphasis on developing stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054A 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1054A 6.00 Jazz Piano. A performance oriented course dealing primarily with Cuban popular music styles. An in depth examination of various Afro-Cuban traditional musics, which have had important influence on the popular styles, will also be presented. Open to non-majors.

FA/MUSI 1054B 3.00 Jazz Bass. This course focuses on performance techniques within the tradition of jazz bass as manifested in various historical and contemporary styles. Practical instruction in jazz bass playing includes an emphasis on developing proper technique, tone, intonation, harmonic conception, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054B 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1054B 6.00 Jazz Bass. This course focuses on performance techniques within the tradition of jazz bass as manifested in various historical and contemporary styles. Practical instruction in jazz bass playing includes an emphasis on developing proper technique, tone, intonation, harmonic conception, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor FA/MUSI 1054B 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1054C 3.00 Jazz Percussion. This course focuses on performance dealing primarily with the tradition of jazz percussion performance styles. Practical instruction in jazz drum "set" or "kit" includes an emphasis on developing proper technique, stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054C 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1054C 6.00 Jazz Percussion. This course focuses on performance dealing primarily with the tradition of jazz percussion performance styles. Practical instruction in jazz drum "set" or "kit" includes an emphasis on developing proper technique, stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054C 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1054D 3.00 Jazz Guitar. This course focuses on performance techniques within the tradition of jazz guitar as manifested in various historical and contemporary styles. Practical instruction in jazz guitar playing includes an emphasis on developing melodic technique, harmonic structure, stylistic integrity, comping fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054D 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1054D 6.00 Jazz Guitar. This course focuses on performance techniques within the tradition of jazz guitar as manifested in various historical and contemporary styles. Practical instruction in jazz guitar playing includes an emphasis on developing melodic technique, harmonic structure, stylistic integrity, comping fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054D 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1054E 3.00 Jazz Woodwind. This course focuses on performance techniques within the tradition of jazz woodwind (saxophone, clarinet, flute) as manifested in various historical and contemporary styles. Practical instruction in jazz woodwind playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054E 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1054E 6.00 Jazz Woodwind. This course focuses on performance techniques within the tradition of jazz woodwind (saxophone, clarinet, flute) as manifested in various historical and contemporary styles. Practical instruction in jazz woodwind playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054E 6.00, appropriate lower level or permission of the instructor.

FA/MUSI 1054F 3.00 Jazz Brass. This course focuses on performance techniques within the tradition of jazz brass (trumpet, trombone, tuba) as manifested in various historical and contemporary styles. Practical instruction in jazz brass playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054F 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1054F 6.00 Jazz Brass. This course focuses on performance techniques within the tradition of jazz brass (trumpet, trombone, tuba) as manifested in various historical and contemporary styles. Practical instruction in jazz brass playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054F 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1054G 3.00 Jazz Vocal. This course focuses on performance dealing primarily with the tradition of solo jazz singing. Practical instruction in jazz vocal performance includes an emphasis on developing stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054G 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1054G 6.00 Jazz Vocal. This course focuses on performance dealing primarily with the tradition of solo jazz singing. Practical instruction in jazz vocal performance includes an emphasis on developing stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054G 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1059 3.00 Jazz Theory and Musicianship I. A jazz theory course for students in the Jazz Performance stream. All students enrolled in FA/MUSI 1051 6.00 must be concurrently enrolled in FA/MUSI 1059 3.00. However, qualified students may elect to take FA/MUSI 1059 3.00 without concurrent enrolment in FA/MUSI 1051 6.00. Corequisite: FA/MUSI 1000 6.00 or FA/MUSI 2000 6.00, and FA/MUSI 1200 9.00.

FA/MUSI 1080 3.00 Classical Piano Performance. Instruction and recital preparation in classical piano through individual lessons and master classes. Prerequisite: Placement by audition in September.

FA/MUSI 1080 6.00 Classical Piano Performance. Instruction and recital preparation in classical piano through individual lessons and master classes. Prerequisite: Permission of the course director, by audition.

FA/MUSI 1081 3.00 Piano Literature and Pedagogy. Literature and pedagogy of classical piano. Students undertake lecture demonstrations, piano four-hand projects and research papers. The literature will rotate through a three-year cycle treating different historical periods. Open to non-majors who have studied piano. Activities vary according to the level of skill and experience of the individual student. Prerequisite: Permission of the course director.

FA/MUSI 1082 3.00 Piano Accompanying. This course develops the pianist's ability to function as a sensitive and musical accompanist. Prerequisite: Permission of the course director.

FA/MUSI 1090 3.00 Middle Eastern Ensemble. Practical instruction in selected Middle Eastern classical and folk repertoires drawn from Arab, Persian and Turkish cultures. In addition to voice and percussion (frame drum, darabouka) instrumentation will include 'oud, setar (lute), violin and ney (reed flute). Prerequisite: Permission of the course director.

FA/MUSI 1091 3.00 World Music Chorus. A practical performance course which surveys selected polyphonic traditions from around the world. This course seeks to expand conceptions regarding vocal technique and production while exploring various compositional possibilities. Prerequisite: Permission of the course director.

FA/MUSI 1092 3.00 Early Music Ensemble. Practical instruction in selected repertoires drawn from Medieval and Renaissance sources. Ensembles will utilize voice, wind (recorders and gemhorns), string and percussion instruments. Prerequisite: Permission of the instructor.

FA/MUSI 1093 3.00 Balkan Music Ensemble. Practical instruction in selected repertoires drawn from the rich and varied Balkan region sources. Ensembles will utilize voice, string, wind and percussion instruments. Prerequisite: Permission of the instructor.

FA/MUSI 1094 3.00 Escola de Samba. Practical instruction in established and newly-composed repertoires drawn from the confluence of Afrolatin folk/popular music and jazz. The course will provide fundamental instruction in Latin folk music traditions. Prerequisite: Permission of the instructor for FA/MUSI 1094 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1095 3.00 Caribbean Ensemble. Practical instruction in repertoires drawn from the island cultures of the Caribbean region with a focus on the steel pan tradition. The course will provide fundamental instruction in steel pan or drum repertoire, techniques and traditions. Prerequisite: Permission of the instructor for FA/MUSI 1095 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 1099A 3.00 World Music: Individual Instruction - Ashkenazi and Sephardic Vocal Music. Private voice lessons in Ashkenazi, Klezmer, Yiddish and Sephardic (especially Judeo-Spanish) singing and song repertoires. Emphasis on text clarity, stylistic awareness and repertoire development will be featured. Open to non-majors.

FA/MUSI 1099A 6.00 World Music: Individual Instruction - Ashkenazi and Sephardic Vocal Music. Private voice lessons in Ashkenazi, Klezmer, Yiddish and Sephardic (especially Judeo-Spanish) singing and song repertoires. Emphasis on text clarity, stylistic awareness and repertoire development will be featured. Open to non-majors.

FA/MUSI 1099B 3.00 World Music: Individual Instruction - Balkan Vocal Music. Private instruction in the vocal techniques and repertoires of the Balkans with an emphasis on voice placement, vocal production and ornamentation. Students will develop the timbres and microtonal pitches typical of traditional repertoire from Bulgaria, Croatia, Macedonia, Serbia and Turkey. Open to non-majors.

FA/MUSI 1099B 6.00 World Music: Individual Instruction - Balkan Vocal Music. Private instruction in the vocal techniques and repertoires of the Balkans with an emphasis on voice placement, vocal production and ornamentation. Students will develop the timbres and microtonal pitches typical of traditional repertoire from Bulgaria, Croatia, Macedonia, Serbia and Turkey. Open to non-majors.

FA/MUSI 1099C 3.00 World Music: Individual Instruction - Country and Folk Fiddle Traditions. Private instruction in various folk fiddle traditions (Celtic, Klezmer, French-Canadian, country etc.) The course will concentrate on bowing and fingering techniques, repertoire development, tune mastery and stylistic integrity. Open to non-majors.

FA/MUSI 1099C 6.00 World Music: Individual Instruction - Country and Folk Fiddle Traditions. Private instruction in various folk fiddle traditions (Celtic, Klezmer, French-Canadian, country etc.) The course will concentrate on bowing and fingering techniques, repertoire development, tune mastery and stylistic integrity. Open to non-majors.

FA/MUSI 1099D 3.00 World Music: Individual Instruction - Dizi. Private instruction on the Chinese dizi (transverse bamboo flute) including basic and alternative finger techniques, embouchure development, the placement of the dimo membrane, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors.

FA/MUSI 1099D 6.00 World Music: Individual Instruction - Dizi. Private instruction on the Chinese dizi (transverse bamboo flute) including basic and alternative finger techniques, embouchure development, the placement of the dimo membrane, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors.

FA/MUSI 1099E 3.00 World Music: Individual Instruction - Early Music Wind Instruments. Private instruction in recorder, krumhorn and shawm including performance techniques, repertoire development, melodic figuration, improvisation and historical and regional style study. Open to non-majors.

FA/MUSI 1099E 6.00 World Music: Individual Instruction - Early Music Wind Instruments. Private instruction in recorder, krumhorn and shawm including performance techniques, repertoire development, melodic figuration, improvisation and historical and regional style study. Open to non-majors.

FA/MUSI 1099F 3.00 World Music: Individual Instruction - Flamenco Guitar. Private study of flamenco guitar including right-hand strumming patterns (rasqueado), idiomatic modal harmonic voicings and progressions, traditional forms (toques) and rhythmic cycles (compas), traditional solo variations (falsetas) and the practice of dance accompaniment. Open to non-majors.

FA/MUSI 1099F 6.00 World Music: Individual Instruction - Flamenco Guitar. Private study of flamenco guitar including right-hand strumming patterns (rasqueado), idiomatic modal harmonic voicings and progressions, traditional forms (toques) and rhythmic cycles (compas), traditional solo variations (falsetas) and the practice of dance accompaniment. Open to non-majors.

FA/MUSI 1099G 3.00 World Music: Individual Instruction - Folk Guitar. Private instruction in folk guitar techniques including finger-picking, strumming patterns, counter melodies, alternate and open-string tunings and voicings, rhythmic styles and traditional accompaniment patterns. Open to non-majors.

FA/MUSI 1099G 6.00 World Music: Individual Instruction - Folk Guitar. Private instruction in folk guitar techniques including finger-picking, strumming patterns, counter melodies, alternate and open-string tunings and voicings, rhythmic styles and traditional accompaniment patterns. Open to non-majors.

FA/MUSI 1099H 3.00 World Music: Individual Instruction - Hand Percussion: Various Traditions. Private study of specific hand percussion traditions (i.e. Latin percussion, Cuban popular music (conga,

bongo etc.), Cuban bata, celtic, tambora, frame drum, cajon etc.) including slap and finger techniques, tone production, idiomatic soloing and accompanying patterns for specific cultural repertoires. Open to non-majors.

FA/MUSI 1099H 6.00 World Music: Individual Instruction - Hand Percussion: Various Traditions. Private study of specific hand percussion traditions (i.e. Latin percussion, Cuban popular music (conga, bongo etc.), Cuban bata, celtic, tambora, frame drum, cajon etc.) including slap and finger techniques, tone production, idiomatic soloing and accompanying patterns for specific cultural repertoires. Open to non-majors.

FA/MUSI 1099I 3.00 World Music: Individual Instruction - Shakuhachi. Private study of the Japanese shakuhachi including fingering technique, articulation, tone production and repertoire development. Open to non-majors.

FA/MUSI 1099I 6.00 World Music: Individual Instruction - Shakuhachi. Private study of the Japanese shakuhachi including fingering technique, articulation, tone production and repertoire development. Open to non-majors.

FA/MUSI 1099J 3.00 World Music: Individual Instruction - Jembe. Private study of the West African jembe including technique, tone production, idiomatic soloing and accompanying patterns for the Mande repertoire and other recent cross-cultural applications. Open to non-majors.

FA/MUSI 1099J 6.00 World Music: Individual Instruction - Jembe. Private study of the West African jembe including technique, tone production, idiomatic soloing and accompanying patterns for the Mande repertoire and other recent cross-cultural applications. Open to non-majors.

FA/MUSI 1099K 3.00 World Music: Individual Instruction - Kora. Private study of the kora focusing on articulation, "groove" (kumbengo), ornamentation and improvised passagework (birimintingo) and standard repertoire from the Mande bardic tradition (jaliya). Open to non-majors.

FA/MUSI 1099K 6.00 World Music: Individual Instruction - Kora. Private study of the kora focusing on articulation, "groove" (kumbengo), ornamentation and improvised passagework (birimintingo) and standard repertoire from the Mande bardic tradition (jaliya). Open to non-majors.

FA/MUSI 1099L 3.00 World Music: Individual Instruction - Baglama. Private instruction in Turkish baglama (long-necked, plucked, folk lute with moveable frets) with an emphasis on regional playing styles and repertoire through knowledge of various tunings, modes, meters and mastery of left-hand (hit-ons, pull-offs etc.) and right-hand (plectrum strokes) techniques. Open to non-majors.

FA/MUSI 1099L 6.00 World Music: Individual Instruction - Baglama. Private instruction in Turkish baglama (long-necked, plucked, folk lute with moveable frets) with an emphasis on regional playing styles and repertoire through knowledge of various tunings, modes, meters and mastery of left-hand (hit-ons, pull-offs etc.) and right-hand (plectrum strokes) techniques. Open to non-majors.

FA/MUSI 1099M 3.00 World Music: Individual Instruction - Medieval and Renaissance Bowed Strings. Private instruction in medieval bowed strings (rebec, vielle, viol da gamba). This course seeks to develop a flexible technique and extensive knowledge of repertoire. Open to non-majors.

FA/MUSI 1099M 6.00 World Music: Individual Instruction - Medieval and Renaissance Bowed Strings. Private instruction in medieval bowed strings (rebec, vielle, viol da gamba). This course seeks to develop a flexible technique and extensive knowledge of repertoire. Open to non-majors.

FA/MUSI 1099O 3.00 World Music: Individual Instruction - 'Oud. Private study of the oud concentrating on performance techniques, developing sensibilities for microtonal tuning and idiomatic ornamentation, modal repertoire (maqam), improvisation (taqsim) and the standard

compositional repertoire of various West Asian and North African traditions. Open to non-majors.

FA/MUSI 10990 6.00 World Music: Individual Instruction - 'Oud. Private study of the oud concentrating on performance techniques, developing sensibilities for microtonal tuning and idiomatic ornamentation, modal repertoire (maqam), improvisation (taqsim) and the standard compositional repertoire of various West Asian and North African traditions. Open to non-majors.

FA/MUSI 1099P 3.00 World Music: Individual Instruction - Pipa. Private instruction in pipa (pear-shaped plucked lute). This course will introduce the student to alternative left hand fingering positions, the five finger tremolo, the two finger pi-pa technique, the bending of strings and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors.

FA/MUSI 1099P 6.00 World Music: Individual Instruction - Pipa. Private instruction in pipa (pear-shaped plucked lute). This course will introduce the student to alternative left hand fingering positions, the five finger tremolo, the two finger pi-pa technique, the bending of strings and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors.

FA/MUSI 1099Q 3.00 World Music: Individual Instruction - Koto. Private instruction in Japanese koto. This course will introduce the student to traditional repertoire and performance practice, hand positions, playing techniques and regional and historical variants. Open to non-majors.

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FA/MUSI 1099R 3.00 World Music: Individual Instruction - Recorder. Private study in recorder with an emphasis on performance technique, transposition, ornamentation and repertoire. Use of the recorder as a important pedagogical instrument will be considered and appropriate repertoire studied. Open to non-majors.

FA/MUSI 1099R 6.00 World Music: Individual Instruction - Recorder. Private study in recorder with an emphasis on performance technique, transposition, ornamentation and repertoire. Use of the recorder as a important pedagogical instrument will be considered and appropriate repertoire studied. Open to non-majors.

FA/MUSI 1099S 3.00 World Music: Individual Instruction - Setar. Private study of the Persian setar (long necked lute) including technique, traditional repertoire (radif) and performance practice. Open to non-majors.

FA/MUSI 1099S 6.00 World Music: Individual Instruction - Setar. Private study of the Persian setar (long necked lute) including technique, traditional repertoire (radif) and performance practice. Open to non-majors.

FA/MUSI 1099T 3.00 World Music: Individual Instruction - Tabla. Private study of North Indian tabla drums including digital technique, tala (rhythmic structure) theory, accompaniment styles, solo repertoire and improvisatory practice. Open to non-majors.

FA/MUSI 1099T 6.00 World Music: Individual Instruction - Tabla. Private study of North Indian tabla drums including digital technique, tala (rhythmic structure) theory, accompaniment styles, solo repertoire and improvisatory practice. Open to non-majors.

FA/MUSI 1099U 3.00 World Music: Individual Instruction - Plucked Strings: Medieval and Renaissance. Private study of early music plucked strings: lute, harp, psaltery. Study will include playing techniques, acquisition of repertoire, improvisation, ornamentation and style awareness. Open to non-majors.

FA/MUSI 1099U 6.00 World Music: Individual Instruction - Plucked Strings: Medieval and Renaissance. Private study of early music plucked strings: lute, harp, psaltery. Study will include playing techniques,

acquisition of repertoire, improvisation, ornamentation and style awareness. Open to non-majors.

FA/MUSI 1099V 3.00 World Music: Individual Instruction - Village Folk Vocal Styles. Private Instruction in the vocal techniques and repertoires of various folk vocal traditions with an emphasis on repertoire development, vocal production and ornamentation. Repertoire will be chosen from various world music sources with an emphasis on the Canadian, American and British traditions. Open to non-majors.

FA/MUSI 1099V 6.00 World Music: Individual Instruction - Village Folk Vocal Styles. Private Instruction in the vocal techniques and repertoires of various folk vocal traditions with an emphasis on repertoire development, vocal production and ornamentation. Repertoire will be chosen from various world music sources with an emphasis on the Canadian, American and British traditions. Open to non-majors.

FA/MUSI 1099W 3.00 World Music: Individual Instruction - World Rhythms for Drumkit. Private Instruction on the drumset with an emphasis on developing fluency in the unique rhythmic patterns and grooves drawn from various world music traditions. Work will include odd meters, polyrhythmic forms, national dance styles (samba, reggae etc.) and alternative performance techniques. Open to non-majors.

FA/MUSI 1099W 6.00 World Music: Individual Instruction - World Rhythms for Drumkit. Private Instruction on the drumset with an emphasis on developing fluency in the unique rhythmic patterns and grooves drawn from various world music traditions. Work will include odd meters, polyrhythmic forms, national dance styles (samba, reggae etc.) and alternative performance techniques. Open to non-majors.

FA/MUSI 1099X 3.00 World Music: Individual Instruction - Xiao. Private instruction in xiao (notched vertical flute). This course will introduce the student to basic and alternative fingerings, embouchure development, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors.

FA/MUSI 1099X 6.00 World Music: Individual Instruction - Xiao. Private instruction in xiao (notched vertical flute). This course will introduce the student to basic and alternative fingerings, embouchure development, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors.

FA/MUSI 1099Y 3.00 World Music: Individual Instruction - Yangqin. Private instruction in yangqin (trapezoidal hammered dulcimer) including beater techniques, rhythmic figuration, ornamentation and regional genre studies. Standard Chinese notation will be used. Open to non-majors.

FA/MUSI 1099Y 6.00 World Music: Individual Instruction - Yangqin. Private instruction in yangqin (trapezoidal hammered dulcimer) including beater techniques, rhythmic figuration, ornamentation and regional genre studies. Standard Chinese notation will be used. Open to non-majors.

FA/MUSI 1099Z 3.00 World Music: Individual Instruction - Zhonghu and Erhu. Private instruction in Chinese erhu and zhonghu (two-stringed bowed lute) introducing left-hand fingerings, position shifts, various bowing techniques and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors.

FA/MUSI 1099Z 6.00 World Music: Individual Instruction - Zhonghu and Erhu. Private instruction in Chinese erhu and zhonghu (two-stringed bowed lute) introducing left-hand fingerings, position shifts, various bowing techniques and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors.

FA/MUSI 1110 3.00 Composition Studio I. An introduction to musical composition for acoustic instruments and voice, emphasizing clarity as attained by distinct decisions about all compositional variables and adequate notation of these. Students are expected to expand their idiomatic ranges. Prerequisites or corequisites: FA/MUSI 1000 6.00 or FA/MUSI 2000 6.00 and FA/MUSI 1200 9.00. Open to non-majors/minors by permission of the course director. Degree credit exclusion: the former FA/MUSI 2110 3.00.

FA/MUSI 1140 6.00 Digital and Electronic Media I. This course deals with the historical, technical and aesthetic aspects of electronic music systems in theory, composition and performance. Work includes the theory and analysis of acoustics, sound recording, classical tape techniques, synthesizers, microphones, mixers and various digital and analogue devices and methods. Prerequisites or corequisites: For music majors, FA/MUSI 1000 6.00 (or FA/MUSI 2000 6.00) and FA/MUSI 1200 9.00. Open to non-majors and minors by permission of the instructor.

FA/MUSI 1200 9.00 Musics and Cultures I. Students are exposed to concepts underlying music as a whole, with emphasis upon the cultivation of listening skills and upon the aural recognition of particular kinds of musical materials. Topics include rhythm and meter, acoustics, melody, harmony, texture, musical form and basic techniques of analysis. Five hours. Open only to music majors and minors, and required of all first-year full time music majors. Available to students in fine arts cultural studies by entrance examination.

FA/MUSI 1510 6.00 The Musical Experience. This course teaches active, creative listening skills largely via an examination of the history of European "art" music from the medieval period to the present. In the process, students will learn to read music and a modicum of music theory will be introduced. In addition, the music of a number of non-European cultures will be briefly explored. Although a formal background in music is not required, students will be expected to perform rhythmic and structural analyses. Degree credit exclusions: FA/MUSI 1511 3.00, FA/MUSI 1512 3.00. Note: Not open to music majors or minors.

FA/MUSI 1520 6.00 Rhythm and Blues, Soul, Funk and Rap. This course explores in-depth the range of African-American popular musics that have come into existence since the end of the Second World War. All styles and genres are studied from both a musicological and sociological perspective. Designed for students not majoring or minoring in music.

FA/MUSI 1530 6.00 Rock and Popular Music. This course explores in-depth from both a musicological and sociological perspective the range of Euro-American popular musics as well as some styles of British popular music that have come into existence since the end of the Second World War. Designed for students not majoring or minoring in music.

FA/MUSI 1540 6.00 Popular Music of the World. This course is a broad, comparative survey of the indigenous music of North and South America, Africa, Asia, Europe, Australia and Oceania. Selected classical, folk and popular genres from around the globe will be studied from the perspectives of varying social contexts, musical structures and performance practices. Note: This course is designed for students not majoring or minoring in music. No prior training is required.

FA/MUSI 1550 6.00 Latin and Caribbean Popular Music. This course explores the popular music styles found in Latin America (Central and South America including Brasil, Argentina, Venezuela etc.) and the Caribbean (including Jamaica, Cuba, Trinidad etc.). Areas of musical style study will include salsa, samba, tango, bossa nova, reggae, zouk, calypso, merengue etc. Note: This course is open to non-majors only.

FA/MUSI 2020A 3.00 Classical Performance: Flute. Continuation of FA/MUSI 1025A 6.00, FA/MUSI 1025A 9.00 or FA/MUSI 1020A 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020A 6.00 Classical Performance: Flute. Continuation of FA/MUSI 1025A 6.00, FA/MUSI 1025A 9.00 or FA/MUSI 1020A 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020B 3.00 Classical Performance: Oboe. Continuation of FA/MUSI 1025A 6.00, FA/MUSI 1025A 9.00 or FA/MUSI 1020B 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020B 6.00 Classical Performance: Oboe. Continuation of FA/MUSI 1025A 6.00, FA/MUSI 1025A 9.00 or FA/MUSI 1020B 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020C 3.00 Classical Performance: Clarinet. Continuation of FA/MUSI 1025A 6.00, FA/MUSI 1025A 9.00 or FA/MUSI 1020C 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020C 6.00 Classical Performance: Clarinet. Continuation of FA/MUSI 1025A 6.00, FA/MUSI 1025A 9.00 or FA/MUSI 1020C 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020D 3.00 Classical Performance: Bassoon. Continuation of FA/MUSI 1025A 6.00, FA/MUSI 1025A 9.00 or FA/MUSI 1020D 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020D 6.00 Classical Performance: Bassoon. Continuation of FA/MUSI 1025A 6.00, FA/MUSI 1025A 9.00 or FA/MUSI 1020D 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020E 3.00 Classical Performance: Saxophone. Continuation of FA/MUSI 1025A 6.00, FA/MUSI 1025A 9.00 or FA/MUSI 1020E 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020E 6.00 Classical Performance: Saxophone. Continuation of FA/MUSI 1025A 6.00, FA/MUSI 1025A 9.00 or FA/MUSI 1020E 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020F 3.00 Classical Performance: French Horn. Continuation of FA/MUSI 1025B 6.00, FA/MUSI 1025B 9.00, or FA/MUSI 1020F 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020F 6.00 Classical Performance: French Horn. Continuation of FA/MUSI 1025B 6.00, FA/MUSI 1025B 9.00, or FA/MUSI 1020F 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020G 3.00 Classical Performance: Trumpet. Continuation of FA/MUSI 1025B 6.00, FA/MUSI 1025B 9.00, or FA/MUSI 1020G 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020G 6.00 Classical Performance: Trumpet. Continuation of FA/MUSI 1025B 6.00, FA/MUSI 1025B 9.00, or FA/MUSI 1020G 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020H 3.00 Classical Performance: Trombone. Continuation of FA/MUSI 1025B 6.00, FA/MUSI 1025B 9.00, or FA/MUSI 1020H 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020H 6.00 Classical Performance: Trombone. Continuation of FA/MUSI 1025B 6.00, FA/MUSI 1025B 9.00, or FA/MUSI 1020H 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020I 3.00 Classical Performance: Tuba. Continuation of FA/MUSI 1025B 6.00, FA/MUSI 1025B 9.00, or FA/MUSI 1020I 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020I 6.00 Classical Performance: Tuba. Continuation of FA/MUSI 1025B 6.00, FA/MUSI 1025B 9.00, or FA/MUSI 1020I 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020J 3.00 Classical Performance: Percussion. Continuation of FA/MUSI 1023 6.00, FA/MUSI 1023 9.00 or FA/MUSI 1020J 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020J 6.00 Classical Performance: Percussion. Continuation of FA/MUSI 1023 6.00, FA/MUSI 1023 9.00 or FA/MUSI 1020J 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020L 3.00 Classical Performance: Guitar. Continuation of FA/MUSI 1027 6.00, FA/MUSI 1027 9.00 or FA/MUSI 1020L 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020L 6.00 Classical Performance: Guitar. Continuation of FA/MUSI 1027 6.00, FA/MUSI 1027 9.00 or FA/MUSI 1020L 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020M 3.00 Classical Performance: Voice. Continuation of FA/MUSI 1024 6.00, FA/MUSI 1024 9.00 or FA/MUSI 1020M 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020M 6.00 Classical Performance: Voice. Continuation of FA/MUSI 1024 6.00, FA/MUSI 1024 9.00 or FA/MUSI 1020M 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020N 3.00 Classical Performance: Violin. Continuation of FA/MUSI 1026 6.00, FA/MUSI 1026 9.00 or FA/MUSI 1020N 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020N 6.00 Classical Performance: Violin. Continuation of FA/MUSI 1026 6.00, FA/MUSI 1026 9.00 or FA/MUSI 1020N 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020O 3.00 Classical Performance: Viola. Continuation of FA/MUSI 1026 6.00, FA/MUSI 1026 9.00 or FA/MUSI 1020O 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020O 6.00 Classical Performance: Viola. Continuation of FA/MUSI 1026 6.00, FA/MUSI 1026 9.00 or FA/MUSI 1020O 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020P 3.00 Classical Performance: Cello. Continuation of FA/MUSI 1026 6.00, FA/MUSI 1026 9.00 or FA/MUSI 1020P 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020P 6.00 Classical Performance: Cello. Continuation of FA/MUSI 1026 6.00, FA/MUSI 1026 9.00 or FA/MUSI 1020P 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020Q 3.00 Classical Performance: Double Bass. Continuation of FA/MUSI 1026 6.00, FA/MUSI 1026 9.00 or FA/MUSI 020Q 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020Q 6.00 Classical Performance: Double Bass. Continuation of FA/MUSI 1026 6.00, FA/MUSI 1026 9.00 or FA/MUSI 020Q 3.00. Corequisite: FA/MUSI 2024 3.00 or FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2020R 3.00 Classical Performance: Harp. Students receive private harp lessons. Corequisite: Enrolment in a major ensemble.

FA/MUSI 2020R 6.00 Classical Performance: Harp. Students receive private harp lessons. Corequisite: Enrolment in a major ensemble.

FA/MUSI 2020S 3.00 Classical Performance: Euphonium. Students receive private euphonium lessons. Corequisite: Enrolment in a major ensemble.

FA/MUSI 2020S 6.00 Classical Performance: Euphonium. Students receive private euphonium lessons. Corequisite: Enrolment in a major ensemble.

FA/MUSI 2022 3.00 York University Women's Chorus. This course is open to all qualified York University students. The York University Women's Chorus performs repertoire written especially for soprano and also voice ranges, and presents several concerts annually. Open to non-majors. Continuation of FA/MUSI 1022 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2024 3.00 York University Concert Choir. This course is open to all qualified York University students and offers performance training in the environment of a large choir. Continuation of FA/MUSI 1024 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2025 3.00 York University Wind Symphony. This course is open to all qualified York University students and offers performance training in the environment of a large ensemble. Continuation of FA/MUSI 1025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2026 3.00 Orchestra. This course is open to all qualified York University students and offers performance training in the environment of a large ensemble. Continuation of FA/MUSI 1026 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2028B 3.00 York Brass Ensemble. Continuation of FA/MUSI 1028 3.00. Corequisite: FA/MUSI 2020 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2028G 3.00 York Guitar Ensemble. Continuation of FA/MUSI 1028 3.00. Corequisite: FA/MUSI 2020 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2028P 3.00 York Percussion Ensemble. Continuation of FA/MUSI 1028 3.00. Corequisite: FA/MUSI 2020 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2028S 3.00 York Chamber Strings. Continuation of FA/MUSI 1028 3.00. Corequisite: FA/MUSI 2020 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2028W 3.00 York Woodwind Ensemble. Continuation of FA/MUSI 1028 3.00. Corequisite: FA/MUSI 2020 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2029 3.00 Vocal Diction II. Continuation of FA/MUSI 1029 3.00 Vocal Diction I. Examines diction as it relates to performance within the tradition of classical voice. Students will receive practical instruction in classical vocal pronunciation, diction, articulation, and correct vowel formation with an aim to developing the linguistic fluency and foreign language competency necessary for the vocal art in the Western classical tradition. Corequisite: Enrolment in FA/MUSI 1020M 3.00 or permission of the instructor.

FA/MUSI 2031 6.00 Piano Improvisation and Contemporary Styles. Designed for pianists of all backgrounds interested in exploring a variety of improvisational practices and 20th-century techniques and styles. Students learn to develop a compositional orientation to improvisation which allows the free exploration and integration of materials and processes from all periods and cultures. Admission is by audition in September. Open to non-majors. Continuation of FA/MUSI 1031 3.00 or FA/MUSI 1031 6.00. Hours vary. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2032 6.00 Contemporary Musicianship and Improvisation. Designed to integrate musicianship training with work in composition and improvisation. Development of the skills, strategies and sensibilities required to achieve fluency in spontaneous solo and ensemble music making, and the development and refining of one's own musical voice are among the main course objectives. Admission is by audition in September. Continuation of FA/MUSI 1032 3.00 or FA/MUSI 1032 6.00. Hours vary. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2040 6.00 South Indian Music. Practical training in the performance styles of South Indian classical music. Some of the appropriate theory, terminology and cultural background is considered. Prerequisite: Permission of the course director, by audition. No prior experience is necessary.

FA/MUSI 2041 6.00 Philippine Kolintang Ensemble. Practical training in the performance of Philippine Kolintang music. Some of the appropriate theory, terminology and cultural background is considered. Prerequisite: Permission of the course director. No prior experience is necessary.

FA/MUSI 2042 3.00 Gamelan Orchestra. Group instruction in the technique and performance of Indonesian Gamelan repertoire. Rhythmic and melodic techniques are developed while performing on various gongs, metallophones, flutes and drums of the Gamelan orchestra. Repertoire is memorized and ensemble performance practice is emphasized through public performance. Not open to students who have taken FA/MUSI 2042G 3.00. Prerequisite: Permission of the course director. No prior experience is necessary. Open to non-majors.

FA/MUSI 2043 3.00 West African Drum Ensemble. Practical instruction in the performance practice and repertoires of various West African cultures including Ewe, Dagamba, Mandinka and other Mande people. The songs and basic dance movements integral to these traditions will also be studied. FA/MUSI 1043 3.00 is open to non-majors. Appropriate lower level is required for upper-level registration.

FA/MUSI 2044 3.00 Celtic Canadian Folk Ensemble. Practical instruction in several vernacular fiddle-based musical traditions of North America. Some knowledge of fiddle, guitar, piano, harmonica or tin whistle is an asset. Prerequisite: Permission of the course director. No prior experience is necessary. Open to non-majors.

FA/MUSI 2045 3.00 Klezmer Folk Ensemble. Practical performance instruction in the Klezmer musical tradition. Some knowledge of fiddle, guitar, piano or clarinet required. The course develops facility and repertoire in the improvisational styles associated with the Klezmer (Jewish Wedding Band) tradition of central Europe and the Middle East. Prerequisite: Permission of the course director. No prior experience is necessary. Open to non-majors.

FA/MUSI 2046 3.00 African-American Musics: Ragtime, Blues, Boogie-Woogie and Barrelhouse Piano. Practical performance instruction in the African-American traditions of ragtime, blues, barrelhouse, boogie-woogie and stride piano styles. Students develop manual independence, rhythmic security, improvisation skills and stylistic awareness using repertoire chosen from the tradition. Both aural sources and written scores are consulted and used to recreate the music. Prerequisite: Permission of the course director. Open to non-majors with appropriate skill level in piano playing.

FA/MUSI 2047 3.00 Chinese Classical Ensemble. Practical and repertoire studies in traditional Chinese orchestral techniques (chin, erhu etc.) Students learn and perform pieces from the repertoire while concentrating on appropriate instrumental techniques. Prerequisite: Permission of the course director. No prior experience is necessary. Open to non-majors.

FA/MUSI 2048 3.00 Japanese Music. Practical and repertoire studies in traditional instrumental techniques (shakuhachi, koto etc.) Students concentrate on issues of performance such as tone colour, rhythmic accuracy and nuance and ensemble performance. Prerequisite: Permission of the course director. No prior experience is necessary. Open to non-majors.

FA/MUSI 2049 3.00 Cuban Music. A performance course dealing primarily with Cuban popular music styles. An in-depth examination of various Afro-Cuban traditional musics, which have had important influence on the popular styles, will also be presented. Ensembles concentrate on group dynamics and rhythmic interaction with an emphasis on rhythmic feel, style and groove. Prerequisite: Permission of the course director. No prior experience is necessary. Open to non-majors.

FA/MUSI 2051 6.00 Jazz Workshop II. A systematic approach to improvising, and ensemble playing in the jazz idiom. The course is designed primarily for students with instrumental proficiency and basic experience in small group jazz performance and/or jazz theory. Hours vary. Open to non-majors. Continuation of FA/MUSI 1051 6.00. Hours vary. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2052 3.00 Jazz Orchestra II. The York Jazz Orchestra performs traditional and contemporary jazz for large ensembles, including student compositions as well as music by noted jazz composers. Open to non-majors. Note: The Jazz Orchestra meets from September to April. Continuation of FA/MUSI 1052 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2053 3.00 Jazz Choir II. This course provides instruction in jazz choral techniques and emphasizes the development of vocal performance skills within the jazz tradition. Note: The Jazz Choir meets from September to April. Continuation of FA/MUSI 1053 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2054A 3.00 Jazz Piano. A performance oriented course dealing primarily with Cuban popular music styles. An in depth examination of various Afro-Cuban traditional musics, which have had important influence on the popular styles, will also be presented. Open to non-majors.

FA/MUSI 2054A 6.00 Jazz Piano. A performance oriented course dealing primarily with Cuban popular music styles. An in depth examination of various Afro-Cuban traditional musics, which have had important influence on the popular styles, will also be presented. Open to non-majors.

FA/MUSI 2054B 3.00 Jazz Bass. This course focuses on performance techniques within the tradition of jazz bass as manifested in various historical and contemporary styles. Practical instruction in jazz bass playing includes an emphasis on developing proper technique, tone, intonation, harmonic conception, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054B 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2054B 6.00 Jazz Bass. This course focuses on performance techniques within the tradition of jazz bass as manifested in various historical and contemporary styles. Practical instruction in jazz bass playing includes an emphasis on developing proper technique, tone, intonation, harmonic conception, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054B 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2054C 3.00 Jazz Percussion. This course focuses on performance dealing primarily with the tradition of jazz percussion performance styles. Practical instruction in jazz drum "set" or "kit" includes an emphasis on developing proper technique, stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054C 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2054C 6.00 Jazz Percussion. This course focuses on performance dealing primarily with the tradition of jazz percussion performance styles. Practical instruction in jazz drum "set" or "kit" includes an emphasis on developing proper technique, stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054C 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2054D 3.00 Jazz Guitar. This course focuses on performance techniques within the tradition of jazz guitar as manifested in various historical and contemporary styles. Practical instruction in jazz guitar playing includes an emphasis on developing melodic technique, harmonic structure, stylistic integrity, comping fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054D 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2054D 6.00 Jazz Guitar. This course focuses on performance techniques within the tradition of jazz guitar as manifested in various historical and contemporary styles. Practical instruction in jazz guitar playing includes an emphasis on developing melodic technique, harmonic structure, stylistic integrity, comping fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054D 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2054E 3.00 Jazz Woodwind. This course focuses on performance techniques within the tradition of jazz woodwind (saxophone, clarinet, flute) as manifested in various historical and contemporary styles. Practical instruction in jazz woodwind playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054E 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2054E 6.00 Jazz Woodwind. This course focuses on performance techniques within the tradition of jazz woodwind (saxophone, clarinet, flute) as manifested in various historical and contemporary styles. Practical instruction in jazz woodwind playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054E 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2054F 3.00 Jazz Brass. This course focuses on performance techniques within the tradition of jazz brass (trumpet, trombone, tuba) as manifested in various historical and contemporary styles. Practical instruction in jazz brass playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054F 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2054F 6.00 Jazz Brass. This course focuses on performance techniques within the tradition of jazz brass (trumpet, trombone, tuba) as manifested in various historical and contemporary styles. Practical instruction in jazz brass playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054F 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2054G 3.00 Jazz Vocal. This course focuses on performance dealing primarily with the tradition of solo jazz singing. Practical instruction in jazz vocal performance includes an emphasis on developing stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054G 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2054G 6.00 Jazz Vocal. This course focuses on performance dealing primarily with the tradition of solo jazz singing. Practical instruction in jazz vocal performance includes an emphasis on developing stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054G 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2059 3.00 Jazz Theory and Musicianship II. A jazz theory course for students in the Jazz Workshop stream. All students enrolled in FA/MUSI 2051 6.00 must be concurrently enrolled in FA/MUSI 2059 3.00. However, qualified students may elect to take FA/MUSI 2059 3.00 without concurrent enrolment in FA/MUSI 2051 6.00. Prerequisite: FA/MUSI 1059 3.00 or equivalent. Prerequisite or corequisite: FA/MUSI 1000 6.00 or FA/MUSI 2000 6.00, and FA/MUSI 1200 9.00.

FA/MUSI 2080 3.00 Classical Piano Performance. Instruction and recital preparation in classical piano through individual lessons and master classes. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2080 6.00 Classical Piano Performance. Instruction and recital preparation in classical piano through individual lessons and master classes. Prerequisite: Permission of the course director, by audition.

FA/MUSI 2081 3.00 Piano Literature and Pedagogy. Literature and pedagogy of classical piano. Open to non-majors who have studied piano. Activities vary according to the level of skill and experience of the individual student. Prerequisite: Permission of the course director.

FA/MUSI 2082 3.00 Piano Accompanying. This course develops the pianist's ability to function as a sensitive and musical accompanist. Prerequisite: Permission of the course director.

FA/MUSI 2090 3.00 Middle Eastern Ensemble. Practical instruction in selected Middle Eastern classical and folk repertoires drawn from Arab, Persian and Turkish cultures. In addition to voice and percussion (frame drum, darabouka) instrumentation will include 'oud, setar (lute), violin and ney (reed flute). Prerequisite: Permission of the course director.

FA/MUSI 2091 3.00 World Music Chorus. A practical performance course which surveys selected polyphonic traditions from around the world. This course seeks to expand conceptions regarding vocal technique and production while exploring various compositional possibilities. Prerequisite: Permission of the course director.

FA/MUSI 2092 3.00 Early Music Ensemble. Practical instruction in selected repertoires drawn from Medieval and Renaissance sources. Ensembles will utilize voice, wind (recorders and gemhorns), string and percussion instruments. Prerequisite: Permission of the instructor.

FA/MUSI 2093 3.00 Balkan Music Ensemble. Practical instruction in selected repertoires drawn from the rich and varied Balkan region sources. Ensembles will utilize voice, string, wind and percussion instruments. Prerequisite: Permission of the instructor.

FA/MUSI 2094 3.00 Escola de Samba. Practical instruction in established and newly-composed repertoires drawn from the confluence of Afrolatin folk/popular music and jazz. The course will provide fundamental instruction in Latin folk music traditions. Prerequisite: Appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2095 3.00 Caribbean Ensemble. Practical instruction in repertoires drawn from the island cultures of the Caribbean region with a focus on the steel pan tradition. The course will provide fundamental instruction in steel pan or drum repertoire, techniques and traditions. Prerequisite: Appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 2099A 3.00 World Music: Individual Instruction - Ashkenazi and Sephardic Vocal Music. Private voice lessons in Ashkenazi, Klezmer, Yiddish and Sephardic (especially Judeo-Spanish) singing and song repertoires. Emphasis on text clarity, stylistic awareness and repertoire development will be featured. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099A 6.00 World Music: Individual Instruction - Ashkenazi and Sephardic Vocal Music. Private voice lessons in Ashkenazi, Klezmer, Yiddish and Sephardic (especially Judeo-Spanish) singing and song repertoires. Emphasis on text clarity, stylistic awareness and repertoire development will be featured. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099B 3.00 World Music: Individual Instruction - Balkan Vocal Music. Private instruction in the vocal techniques and repertoires of the Balkans with an emphasis on voice placement, vocal production and ornamentation. Students will develop the timbres and microtonal pitches typical of traditional repertoire from Bulgaria, Croatia, Macedonia, Serbia and Turkey. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099B 6.00 World Music: Individual Instruction - Balkan Vocal Music. Private instruction in the vocal techniques and repertoires of the Balkans with an emphasis on voice placement, vocal production and ornamentation. Students will develop the timbres and microtonal pitches typical of traditional repertoire from Bulgaria, Croatia, Macedonia, Serbia and Turkey. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099C 3.00 World Music: Individual Instruction - Country and Folk Fiddle Traditions. Private instruction in various folk fiddle traditions (Celtic, Klezmer, French-Canadian, country etc.) The course will concentrate on bowing and fingering techniques, repertoire development, tune mastery and stylistic integrity. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099C 6.00 World Music: Individual Instruction - Country and Folk Fiddle Traditions. Private instruction in various folk fiddle traditions (Celtic, Klezmer, French-Canadian, country etc.) The course will concentrate on bowing and fingering techniques, repertoire development, tune mastery and stylistic integrity. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099D 3.00 World Music: Individual Instruction - Dizi. Private instruction on the Chinese dizi (transverse bamboo flute) including basic and alternative finger techniques, embouchure development, the placement of the dimo membrane, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099D 6.00 World Music: Individual Instruction - Dizi. Private instruction on the Chinese dizi (transverse bamboo flute) including basic and alternative finger techniques, embouchure development, the placement of the dimo membrane, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099E 3.00 World Music: Individual Instruction - Early Music Wind Instruments. Private instruction in recorder, krumhorn and shawm including performance techniques, repertoire development, melodic figuration, improvisation and historical and regional style study. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099E 6.00 World Music: Individual Instruction - Early Music Wind Instruments. Private instruction in recorder, krumhorn and shawm including performance techniques, repertoire development, melodic figuration, improvisation and historical and regional style study. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099F 3.00 World Music: Individual Instruction - Flamenco Guitar. Private study of flamenco guitar including right-hand strumming patterns (rasqueado), idiomatic modal harmonic voicings and progressions, traditional forms (toques) and rhythmic cycles (compas), traditional solo variations (falsetas) and the practice of dance accompaniment. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099F 6.00 World Music: Individual Instruction - Flamenco Guitar. Private study of flamenco guitar including right-hand strumming patterns (rasqueado), idiomatic modal harmonic voicings and progressions, traditional forms (toques) and rhythmic cycles (compas), traditional solo variations (falsetas) and the practice of dance accompaniment. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099G 3.00 World Music: Individual Instruction - Folk Guitar. Private instruction in folk guitar techniques including finger-picking, strumming patterns, counter melodies, alternate and open-string tunings and voicings, rhythmic styles and traditional accompaniment patterns. Open to non-majors.

FA/MUSI 2099G 6.00 World Music: Individual Instruction - Folk Guitar. Private instruction in folk guitar techniques including finger-picking, strumming patterns, counter melodies, alternate and open-string tunings and voicings, rhythmic styles and traditional accompaniment patterns. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099H 3.00 World Music: Individual Instruction - Hand Percussion: Various Traditions. Private study of specific hand percussion traditions (i.e. Latin percussion, Cuban popular music (conga, bongo etc.), Cuban bata, celtic, tambora, frame drum, cajon etc.) including slap and finger techniques, tone production, idiomatic soloing and accompanying patterns for specific cultural repertoires. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099H 6.00 World Music: Individual Instruction - Hand Percussion: Various Traditions. Private study of specific hand percussion traditions (i.e. Latin percussion, Cuban popular music (conga, bongo etc.), Cuban bata, celtic, tambora, frame drum, cajon etc.) including slap and finger techniques, tone production, idiomatic soloing and accompanying patterns for specific cultural repertoires. Open to non-majors. Appropriate lower level or permission of the instructor.

FA/MUSI 2099I 3.00 World Music: Individual Instruction - Shakuhachi. Private study of the Japanese shakuhachi including fingering technique, articulation, tone production and repertoire development. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099I 6.00 World Music: Individual Instruction - Shakuhachi. Private study of the Japanese shakuhachi including fingering technique, articulation, tone production and repertoire development. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099J 3.00 World Music: Individual Instruction - Jembe. Private study of the West African jembe including technique, tone production, idiomatic soloing and accompanying patterns for the Mande repertoire and other recent cross-cultural applications. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099J 6.00 World Music: Individual Instruction - Jembe. Private study of the West African jembe including technique, tone production, idiomatic soloing and accompanying patterns for the Mande repertoire and other recent cross-cultural applications. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099K 3.00 World Music: Individual Instruction - Kora. Private study of the kora focusing on articulation, "groove" (kumbengo), ornamentation and improvised passagework (birimintingo) and standard repertoire from the Mande bardic tradition (jaliya). Open to non-majors. Prerequisite: Appropriate lower level or the permission of the instructor.

FA/MUSI 2099K 6.00 World Music: Individual Instruction - Kora. Private study of the kora focusing on articulation, "groove" (kumbengo), ornamentation and improvised passagework (birimintingo) and standard repertoire from the Mande bardic tradition (jaliya). Open to non-majors. Prerequisite: Appropriate lower level or the permission of the instructor.

FA/MUSI 2099L 3.00 World Music: Individual Instruction - Baglama. Private instruction in Turkish baglama (long-necked, plucked, folk lute with moveable frets) with an emphasis on regional playing styles and repertoire through knowledge of various tunings, modes, meters and mastery of left-hand (hit-ons, pull-offs etc.) and right-hand (plectrum strokes) techniques. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099L 6.00 World Music: Individual Instruction - Baglama. Private instruction in Turkish baglama (long-necked, plucked, folk lute with moveable frets) with an emphasis on regional playing styles and repertoire through knowledge of various tunings, modes, meters and mastery of left-hand (hit-ons, pull-offs etc.) and right-hand (plectrum strokes) techniques. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099M 3.00 World Music: Individual Instruction - Medieval and Renaissance Bowed Strings. Private instruction in medieval bowed strings (rebec, vielle, viol da gamba). This course seeks to develop

a flexible technique and extensive knowledge of repertoire. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099M 6.00 World Music: Individual Instruction - Medieval and Renaissance Bowed Strings. Private instruction in medieval bowed strings (rebec, vielle, viol da gamba). This course seeks to develop a flexible technique and extensive knowledge of repertoire. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099O 3.00 World Music: Individual Instruction - 'Oud. Private study of the oud concentrating on performance techniques, developing sensibilities for microtonal tuning and idiomatic ornamentation, modal repertoire (maqam), improvisation (taqsim) and the standard compositional repertoire of various West Asian and North African traditions. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099O 6.00 World Music: Individual Instruction - 'Oud. Private study of the oud concentrating on performance techniques, developing sensibilities for microtonal tuning and idiomatic ornamentation, modal repertoire (maqam), improvisation (taqsim) and the standard compositional repertoire of various West Asian and North African traditions. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099P 3.00 World Music: Individual Instruction - Pipa. Private instruction in pipa (pear-shaped plucked lute). This course will introduce the student to alternative left hand fingering positions, the five finger tremolo, the two finger pi-pa technique, the bending of strings and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099P 6.00 World Music: Individual Instruction - Pipa. Private instruction in pipa (pear-shaped plucked lute). This course will introduce the student to alternative left hand fingering positions, the five finger tremolo, the two finger pi-pa technique, the bending of strings and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099Q 3.00 World Music: Individual Instruction - Koto. Private instruction in Japanese koto. This course will introduce the student to traditional repertoire and performance practice, hand positions, playing techniques and regional and historical variants. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099Q 6.00 World Music: Individual Instruction - Koto. Private instruction in Japanese koto. This course will introduce the student to traditional repertoire and performance practice, hand positions, playing techniques and regional and historical variants. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099R 3.00 World Music: Individual Instruction - Recorder. Private study in recorder with an emphasis on performance technique, transposition, ornamentation and repertoire. Use of the recorder as a important pedagogical instrument will be considered and appropriate repertoire studied. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099R 6.00 World Music: Individual Instruction - Recorder. Private study in recorder with an emphasis on performance technique, transposition, ornamentation and repertoire. Use of the recorder as a important pedagogical instrument will be considered and appropriate repertoire studied. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099S 3.00 World Music: Individual Instruction - Setar. Private study of the Persian setar (long necked lute) including technique, traditional repertoire (radif) and performance practice. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099S 6.00 World Music: Individual Instruction - Setar. Private study of the Persian setar (long necked lute) including technique, traditional repertoire (radif) and performance practice. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099T 3.00 World Music: Individual Instruction - Tabla. Private study of North Indian tabla drums including digital technique, tala (rhythmic structure) theory, accompaniment styles, solo repertoire and improvisatory practice. Open to non-majors.

FA/MUSI 2099T 6.00 World Music: Individual Instruction - Tabla. Private study of North Indian tabla drums including digital technique, tala (rhythmic structure) theory, accompaniment styles, solo repertoire and improvisatory practice. Open to non-majors.

FA/MUSI 2099U 3.00 World Music: Individual Instruction - Plucked Strings: Medieval and Renaissance. Private study of early music plucked strings: lute, harp, psaltery. Study will include playing techniques, acquisition of repertoire, improvisation, ornamentation and style awareness. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099U 6.00 World Music: Individual Instruction - Plucked Strings: Medieval and Renaissance. Private study of early music plucked strings: lute, harp, psaltery. Study will include playing techniques, acquisition of repertoire, improvisation, ornamentation and style awareness. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099V 3.00 World Music: Individual Instruction - Village Folk Vocal Styles. Private instruction in the vocal techniques and repertoires of various folk vocal traditions with an emphasis on repertoire development, vocal production and ornamentation. Repertoire will be chosen from various world music sources with an emphasis on the Canadian, American and British traditions. Open to non-majors.

FA/MUSI 2099V 6.00 World Music: Individual Instruction - Village Folk Vocal Styles. Private instruction in the vocal techniques and repertoires of various folk vocal traditions with an emphasis on repertoire development, vocal production and ornamentation. Repertoire will be chosen from various world music sources with an emphasis on the Canadian, American and British traditions. Open to non-majors.

FA/MUSI 2099W 3.00 World Music: Individual Instruction - World Rhythms for Drumkit. Private instruction on the drumset with an emphasis on developing fluency in the unique rhythmic patterns and grooves drawn from various world music traditions. Work will include odd meters, polyrhythmic forms, national dance styles (samba, reggae etc.), and alternative performance techniques. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099W 6.00 World Music: Individual Instruction - World Rhythms for Drumkit. Private instruction on the drumset with an emphasis on developing fluency in the unique rhythmic patterns and grooves drawn from various world music traditions. Work will include odd meters, polyrhythmic forms, national dance styles (samba, reggae etc.) and alternative performance techniques. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099X 3.00 World Music: Individual Instruction - Xiao. Private instruction in xiao (notched vertical flute). This course will introduce the student to basic and alternative fingerings, embouchure development, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099X 6.00 World Music: Individual Instruction - Xiao. Private instruction in xiao (notched vertical flute). This course will introduce the student to basic and alternative fingerings, embouchure development, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099Y 3.00 World Music: Individual Instruction - Yangqin. Private instruction in yangqin (trapezoidal hammered dulcimer) including beater techniques, rhythmic figuration, ornamentation and regional genre studies. Standard Chinese notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099Y 6.00 World Music: Individual Instruction - Yangqin. Private instruction in yangqin (trapezoidal hammered dulcimer) including beater techniques, rhythmic figuration, ornamentation and regional genre studies. Standard Chinese notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099Z 3.00 World Music: Individual Instruction - Zhonghu and Erhu. Private instruction in Chinese erhu and zhonghu (two-stringed bowed lute) introducing left-hand fingerings, position shifts, various bowing techniques and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2099Z 6.00 World Music: Individual Instruction - Zhonghu and Erhu. Private instruction in Chinese erhu and zhonghu (two-stringed bowed lute) introducing left-hand fingerings, position shifts, various bowing techniques and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 2110 3.00 Composition Studio II. A continuation of work begun in FA/MUSI 1110 3.00, emphasizing the control of variation, repetition and development to create coherent musical thought in short compositions for small groups of acoustic instruments and voices. Prerequisite: FA/MUSI 1110 3.00 or permission of the course director.

FA/MUSI 2140 6.00 Digital and Electronic Media II. A continuation of work begun in MUSI 1140 6.00, with an emphasis on the historical and contemporary use of digital and electronic music systems. Emphasis is on creative studio work using digital and electronic music systems in composition and performance. Mandatory lab fee. Prerequisites: FA/MUSI 1140 6.00 or permission of the course director, and for music majors, FA/MUSI 1000 6.00 (or FA/MUSI 2000 6.00) and FA/MUSI 1200 9.00.

FA/MUSI 2200 6.00 Musics and Cultures II. Historical developments and social context of specific repertoires including Western art music. Involves intensive repertoire study, aural perception, analysis and score reading in addition to developing skills in writing about music and its place in the historical/cultural continuum. Mandatory unless exempted via a proficiency exam. Prerequisites: FA/MUSI 1000 6.00 with a minimum grade of C+, and FA/MUSI 1200 9.00. Note: Must be completed within the first 60 credits by all music majors.

FA/MUSI 2201 3.00 Counterpoint. Students master the traditional pedagogy of species counterpoint while studying examples of the Renaissance vocal polyphonic style from which it is derived. Correlated work in vocal, aural and keyboard skills is a major component of the course. Four hours plus lab time. Prerequisites: FA/MUSI 1000 6.00 or FA/MUSI 2000 6.00 with a minimum final grade of C+, or equivalent score on a proficiency exam, and FA/MUSI 1200 6.00 or FA/MUSI 1200 9.00.

FA/MUSI 2202 3.00 Harmony. Students study the traditional art of selecting and connecting chords in four voices. Idioms which draw on the formulae of this texture in freer or abstract presentations are also considered, as these are the materials of classical music which are most nearly adopted in jazz, popular and some folk music styles. Four hours plus lab time. Prerequisites: FA/MUSI 1000 6.00 or FA/MUSI 2000 6.00 with a minimum grade of C+, and FA/MUSI 1200 6.00 or FA/MUSI 1200 9.00.

AK/MUSI 2210 6.00 Introduction to Musical Experience. Through experience of a broad range of music the course seeks to develop active, creative listeners able to respond to and understand music on many levels. (Same as FA/MUSI 1511 3.00 and FA/MUSI 1512 3.00) Note: Students may be expected to attend concerts during the course. This course is for elective credit only. Not open to students who have taken AK/MUSI 2430 6.00.

AK/MUSI 2500 3.00 Elementary Musicianship (Studio). A course in the rudiments of music for students with little or no formal training in music. Reading music on simple instruments, singing songs at sight, taking down rhythms and melodies by ear, conducting and rehearsing ensembles, composing and making arrangements of pieces. On successful completion of this course students may enter AK/MUSI 2600 6.00. Note 1: Students are expected to supply their own course instruments. Note 2: Students who already have credit for AK/MUSI 2600 6.00 or equivalent may not take AK/MUSI 2500 6.00. Note 3: Not open to students who have taken AK/MUSI 2500 6.00.

AK/MUSI 2500 6.00 Elementary Musicianship (Studio). A course in the rudiments of music for students with little or no formal training in music. Reading music on simple instruments, singing songs at sight, taking down rhythms and melodies by ear, conducting and rehearsing ensembles, composing and making arrangements of pieces. On successful completion of this course students may enter AK/MUSI 2600 6.00. Note 1: Students are expected to supply their own course instruments. Note 2: Students who already have credit for AK/MUSI 2600 6.00 or equivalent may not take AK/MUSI 2500 6.00. Note 3: Not open to students who have taken AK/MUSI 2500 3.00.

FA/MUSI 2520 6.00 Contemporary Black Urban Music. Examines aspects of black urban music from *circa* 1985 to the present through an analysis of the musical style, culture and social implications of a variety of genres such as rap, house, hip hop, jungle etc. Open to non-majors.

FA/MUSI 2600 6.00 Introduction to Music Pedagogy (Primary/Junior Level). Serves as an introduction to prominent theories and practices of music education at the primary-junior level. Particular attention is given to the contributions of Kodaly, Orff and Dalcroze but other relevant pedagogical strategies are also examined. Open to non-majors. No previous musical training is required.

FA/MUSI 3000 6.00 Score Study, Advanced Musicianship and Conducting. Advanced musicianship, with emphasis upon skills and methods applicable to learning and teaching music from orchestral vocal and ensemble scores. Individual and class exercises in conducting, analysis, aural recognition, keyboard harmony, sightreading and transposing. Prerequisites or corequisites: Foundation courses. Keyboard proficiency is helpful.

FA/MUSI 3010 6.00 Rhythm. A comprehensive musicianship course, developing rhythmic skills and perception through a detailed study of Indian rhythmic theory and practice from the disciplines of music and dance. Rhythmic systems of other musical cultures are also discussed in a comparative context. Prerequisites or corequisites: Foundation courses or permission of the course director.

FA/MUSI 3020A 3.00 Classical Performance: Flute. Continuation of FA/MUSI 2025A 6.00, FA/MUSI 2025A 9.00 or FA/MUSI 2020A 3.00. Corequisite: FA/MUSI 3024 3.00 or FA/MUSI 3025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3020A 6.00 Classical Performance: Flute. Continuation of FA/MUSI 2025A 6.00, FA/MUSI 2025A 9.00 or FA/MUSI 2020A 3.00. Corequisite: FA/MUSI 3024 3.00 or FA/MUSI 3025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3020B 3.00 Classical Performance: Oboe. Continuation of FA/MUSI 2025A 6.00, FA/MUSI 2025A 9.00 or FA/MUSI 2020B 3.00. Corequisite: FA/MUSI 3024 3.00 or FA/MUSI 3025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3020B 6.00 Classical Performance: Oboe. Continuation of FA/MUSI 2025A 6.00, FA/MUSI 2025A 9.00 or FA/MUSI 2020B 3.00. Corequisite: FA/MUSI 3024 3.00 or FA/MUSI 3025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3020C 3.00 Classical Performance: Clarinet. Continuation of FA/MUSI 2025A 6.00, FA/MUSI 3025A 9.00 or FA/MUSI 3020C 3.00. Corequisite: FA/MUSI 3024 3.00 or FA/MUSI 3025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3022 3.00 York University Women's Chorus. This course is open to all qualified York University students. The York University Women's Chorus performs repertoire written especially for soprano and also voice ranges, and presents several concerts annually. Open to non-majors. Continuation of FA/MUSI 2022 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3024 3.00 York University Concert Choir. This course is open to all qualified York University students and offers performance training in the environment of a large choir. Continuation of FA/MUSI 2024 3.00. Prerequisites: Permission of the course director, by audition.

FA/MUSI 3025 3.00 York University Wind Symphony. This course is open to all qualified York University students and offers performance training in the environment of a large ensemble. Continuation of FA/MUSI 2025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3026 3.00 Orchestra. This course is open to all qualified York University students and offers performance training in the environment of a large ensemble. Continuation of FA/MUSI 2026 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3028B 3.00 York Brass Ensemble. Continuation of FA/MUSI 2028B 3.00. Corequisite: FA/MUSI 3020 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3028G 3.00 York Guitar Ensemble. Continuation of FA/MUSI 2028G 3.00. Corequisite: FA/MUSI 3020 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3028P 3.00 York Percussion Ensemble. Continuation of FA/MUSI 2028P 3.00. Corequisite: FA/MUSI 3020 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3028S 3.00 York Chamber Strings. Continuation of FA/MUSI 2028S 3.00. Corequisite: FA/MUSI 3020 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3028W 3.00 York Woodwind Ensemble. Continuation of FA/MUSI 2028W 3.00. Corequisite: FA/MUSI 3020 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3029 6.00 Master Class in Performance I. An intensive course in performance highlighting historical context, style, interpretation, musicianship and performance practices. Designed for students who have the ability to pursue careers or graduate studies in performance. Open to all. Note: All FA/MUSI 3029 6.00 students participate in a weekly performance master class which includes lectures and practice in performance.

FA/MUSI 3030 3.00 Recital I. This course allows advanced students in performance to present themselves in the format of a concert recital.

FA/MUSI 3030 6.00 Recital I. This course allows advanced students in performance to present themselves in the format of a concert recital.

FA/MUSI 3031 6.00 Piano Improvisation and Contemporary Styles. Designed for pianists of all backgrounds interested in exploring a variety of improvisational practices and 20th-century techniques and styles. Students learn to develop a compositional orientation to improvisation which allows the free exploration and integration of materials and processes from all periods and cultures. Admission is by audition in September. Open to non-majors. Continuation of FA/MUSI 2031 6.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3032 6.00 Contemporary Musicianship and Improvisation. Designed to integrate musicianship training with work in composition and improvisation. Development of the skills, strategies and sensibilities required to achieve fluency in spontaneous solo and ensemble music making, and the development and refining of one's own musical voice are among the main course objectives. Admission is by audition in September. Continuation of FA/MUSI 2032 6.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3040 6.00 South Indian Music. Practical training in the performance styles of South Indian classical music. Some of the appropriate theory, terminology and cultural background is considered. A continuation of FA/MUSI 2040 6.00. Prerequisites: Permission of the course director, by audition.

FA/MUSI 3041 6.00 Philippine Kolintang Ensemble. Practical training in the performance of Philippine Kolintang music. Some of the appropriate theory, terminology and cultural background is considered. A continuation of FA/MUSI 2041 6.00. Prerequisites: Permission of the course director.

FA/MUSI 3042 3.00 Gamelan Orchestra. Group instruction in the technique and performance of Indonesian Gamelan repertoire. Rhythmic and melodic techniques are developed while performing on various gongs, metallophones, flutes, and drums of the Gamelan orchestra. Repertoire is memorized and ensemble performance practice is emphasized through public performance. A continuation of FA/MUSI 2042 3.00. Prerequisite: Permission of the course director. Open to majors and non-majors.

FA/MUSI 3043 3.00 West African Drum Ensemble. Practical instruction in the performance practice and repertoires of various West African cultures including Ewe, Dagamba, Mandinka and other Mande people. The songs and basic dance movements integral to these traditions will also be studied. FA/MUSI 1043 3.00 is open to non-majors. Appropriate lower level is required for upper-level registration.

FA/MUSI 3044 3.00 Celtic Canadian Folk Ensemble. Practical instruction in several vernacular fiddle-based musical traditions of North America. Some knowledge of fiddle, guitar, piano, harmonica or tin whistle is an asset. A continuation of FA/MUSI 2044 3.00. Prerequisite: Permission of the course director. Open to majors and non-majors.

FA/MUSI 3045 3.00 Klezmer Folk Ensemble. Practical performance instruction in the Klezmer musical tradition. Some knowledge of fiddle, guitar, piano or clarinet required. The course develops facility and repertoire in the improvisational styles associated with the Klezmer (Jewish Wedding Band) tradition of central Europe and the Middle East. A continuation of FA/MUSI 2045 3.00. Prerequisite: Permission of the course director. Open to majors and non-majors.

FA/MUSI 3046 3.00 African-American Musics: Ragtime, Blues, Boogie-Woogie and Barrelhouse Piano. Practical performance instruction in the African-American traditions of ragtime, blues, barrelhouse, boogie-woogie and stride piano styles. Students develop manual independence, rhythmic security, improvisation skills and stylistic awareness using repertoire chosen from the tradition. Both aural sources and written scores are consulted and used to recreate the music. A continuation of FA/MUSI 2046 3.00. Prerequisite: Permission of the course director. Note: Open to majors and non-majors with appropriate skill level in piano playing.

FA/MUSI 3047 3.00 Chinese Classical Ensemble. Practical and repertoire studies in traditional Chinese orchestral techniques (chin, erhu etc.) Students learn and perform pieces from the repertoire while concentrating on appropriate instrumental techniques. A continuation of FA/MUSI 2047 3.00. Prerequisite: Permission of the course director. Open to majors and non-majors.

FA/MUSI 3048 3.00 Japanese Music. Practical and repertoire studies in traditional instrumental techniques (shakuhachi, koto etc.) Students concentrate on issues of performance such as tone colour, rhythmic accuracy and nuance, and ensemble performance. A continuation of FA/MUSI 2048 3.00. Prerequisite: Permission of the course director. Open to majors and non-majors.

FA/MUSI 3049 3.00 Cuban Music. A performance course dealing primarily with Cuban popular music styles. An in-depth examination of various Afro-Cuban traditional musics, which have had important influence on the popular styles, will also be presented. Ensembles concentrate on group dynamics and rhythmic interaction with an emphasis on rhythmic feel, style and groove. A continuation of FA/MUSI 2049 3.00. Prerequisite: Permission of the course director. Open to majors and non-majors.

FA/MUSI 3051 6.00 Jazz Workshop III. Advanced improvising and ensemble playing in contemporary jazz, emphasizing theoretical and practical competence in some of its main idioms. Students receive applied training in performance workshops each week. Prerequisites: FA/MUSI 2051 6.00 and permission of the course director, by audition. Corequisite: FA/MUSI 3059 6.00. Prerequisites or corequisites: For music majors, foundation courses.

FA/MUSI 3052 3.00 Jazz Orchestra III. The York Jazz Orchestra performs traditional and contemporary jazz for large ensembles, including student compositions as well as music by noted jazz composers. Open to non-majors. Note: The Jazz Orchestra meets from September to April. Continuation of FA/MUSI 2052 3.00. Prerequisite: Permission of course director, by audition.

FA/MUSI 3053 3.00 Jazz Choir III. This course provides instruction in jazz choral techniques and emphasizes the development of vocal performance skills within the jazz tradition. Note: The Jazz Choir meets from September to April. Continuation of FA/MUSI 2053 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3054A 3.00 Jazz Piano. This course focuses on performance dealing primarily with the tradition of jazz piano in both its solo and ensemble forms. Practical instruction in jazz piano performance includes an emphasis on developing stylistic fluency and repertoire competency. Prerequisite: Appropriate lower level or permission of the instructor for upper-level registration.

FA/MUSI 3054A 6.00 Jazz Piano. This course focuses on performance dealing primarily with the tradition of jazz piano in both its solo and ensemble forms. Practical instruction in jazz piano performance includes an emphasis on developing stylistic fluency and repertoire competency. Prerequisite: Appropriate lower level or permission of the instructor for upper-level registration.

FA/MUSI 3054B 3.00 Jazz Bass. This course focuses on performance techniques within the tradition of jazz bass as manifested in various historical and contemporary styles. Practical instruction in jazz bass playing includes an emphasis on developing proper technique, tone, intonation, harmonic conception, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054B 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3054B 6.00 Jazz Bass. This course focuses on performance techniques within the tradition of jazz bass as manifested in various historical and contemporary styles. Practical instruction in jazz bass playing includes an emphasis on developing proper technique, tone, intonation, harmonic conception, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054B 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3054C 3.00 Jazz Percussion. This course focuses on performance dealing primarily with the tradition of jazz percussion performance styles. Practical instruction in jazz drum "set" or "kit" includes an emphasis on developing proper technique, stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054C 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3054C 6.00 Jazz Percussion. This course focuses on performance dealing primarily with the tradition of jazz percussion performance styles. Practical instruction in jazz drum "set" or "kit" includes an emphasis on developing proper technique, stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054C 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3054D 3.00 Jazz Guitar. This course focuses on performance techniques within the tradition of jazz guitar as manifested in various historical and contemporary styles. Practical instruction in jazz guitar playing includes an emphasis on developing melodic technique, harmonic structure, stylistic integrity, comping fluency and repertoire competency.

Prerequisite: Permission of the instructor for FA/MUSI 1054D 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3054D 6.00 Jazz Guitar. This course focuses on performance techniques within the tradition of jazz guitar as manifested in various historical and contemporary styles. Practical instruction in jazz guitar playing includes an emphasis on developing melodic technique, harmonic structure, stylistic integrity, comping fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054D 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3054E 3.00 Jazz Woodwind. This course focuses on performance techniques within the tradition of jazz guitar as manifested in various historical and contemporary styles. Practical instruction in jazz guitar playing includes an emphasis on developing melodic technique, harmonic structure, stylistic integrity, comping fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054E 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3054E 6.00 Jazz Woodwind. This course focuses on performance techniques within the tradition of jazz guitar as manifested in various historical and contemporary styles. Practical instruction in jazz guitar playing includes an emphasis on developing melodic technique, harmonic structure, stylistic integrity, comping fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054E 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3054F 3.00 Jazz Brass. This course focuses on performance techniques within the tradition of jazz brass (trumpet, trombone, tuba) as manifested in various historical and contemporary styles. Practical instruction in jazz brass playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054F 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3054F 6.00 Jazz Brass. This course focuses on performance techniques within the tradition of jazz brass (trumpet, trombone, tuba) as manifested in various historical and contemporary styles. Practical instruction in jazz brass playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054F 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3054G 3.00 Jazz Vocal. This course focuses on performance dealing primarily with the tradition of solo jazz singing. Practical instruction in jazz vocal performance includes an emphasis on developing stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054G 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3054G 6.00 Jazz Vocal. This course focuses on performance dealing primarily with the tradition of solo jazz singing. Practical instruction in jazz vocal performance includes an emphasis on developing stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054G 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3059 6.00 Jazz Theory and Musicianship III. An intensive jazz theory course for students in the Jazz Workshop stream who, through assessment at the beginning of third year, are eligible to proceed to advanced studies. Prerequisite: FA/MUSI 2059 3.00 or FA/MUSI 2051 6.00 theory or equivalent, or permission of the course director. Prerequisites or corequisites: For music majors, foundation courses.

FA/MUSI 3070 3.00 Electro-Acoustic Orchestra. This course allows students to participate in a large electro-acoustic orchestra that will create (re-create) and perform both historical and contemporary repertoire using both the latest digital sound production hardware as well as traditional

instruments. A participating student will be required to function as both performer and in at least one other capacity such as composer, arranger, improviser or conductor.

FA/MUSI 3071 3.00 Synthesizer Performance. This course prepares the student for a career as a professional synthesizer artist. It deals with the development of specific performance techniques, style considerations and sonic perception related to contemporary synthesizer practice. Prerequisites: Foundation courses.

FA/MUSI 3080 3.00 Classical Piano Performance. Instruction and recital preparation in classical piano through individual lessons and master classes. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3080 6.00 Classical Piano Performance. Instruction and recital preparation in classical piano through individual lessons and master classes. Prerequisite: Permission of the course director, by audition.

FA/MUSI 3081 3.00 Piano Literature and Pedagogy. Literature and pedagogy of classical piano. Open to non-majors who have studied piano. Activities vary according to the level of skill and experience of the individual student. Prerequisite: Permission of the course director.

FA/MUSI 3082 3.00 Piano Accompanying. This course develops the pianist's ability to function as a sensitive and musical accompanist. Prerequisite: Permission of the course director.

FA/MUSI 3090 3.00 Middle Eastern Ensemble. Practical instruction in selected Middle Eastern classical and folk repertoires drawn from Arab, Persian and Turkish cultures. In addition to voice and percussion (frame drum, darabouka) instrumentation will include 'oud, setar (lute), violin and ney (reed flute). Prerequisite: Permission of the course director.

FA/MUSI 3091 3.00 World Music Chorus. A practical performance course which surveys selected polyphonic traditions from around the world. This course seeks to expand conceptions regarding vocal technique and production while exploring various compositional possibilities. Prerequisite: Permission of the course director.

FA/MUSI 3092 3.00 Early Music Ensemble. Practical instruction in selected repertoires drawn from Medieval and Renaissance sources. Ensembles will utilize voice, wind (recorders and gemhorns), string and percussion instruments. Prerequisite: Permission of the instructor.

FA/MUSI 3093 3.00 Balkan Music Ensemble. Practical instruction in selected repertoires drawn from the rich and varied Balkan region sources. Ensembles will utilize voice, string, wind and percussion instruments. Prerequisite: Permission of the instructor.

FA/MUSI 3094 3.00 Escola de Samba. Practical instruction in established and newly-composed repertoires drawn from the confluence of Afrolatin folk/popular music and jazz. The course will provide fundamental instruction in Latin folk music traditions. Prerequisite: Appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3095 3.00 Caribbean Ensemble. Practical instruction in repertoires drawn from the island cultures of the Caribbean region with a focus on the steel pan tradition. The course will provide fundamental instruction in steel pan or drum repertoire, techniques and traditions. Prerequisite: Appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 3099A 3.00 World Music: Individual Instruction - Ashkenazi and Sephardic Vocal Music. Private voice lessons in Ashkenazi, Klezmer, Yiddish and Sephardic (especially Judeo-Spanish) singing and song repertoires. Emphasis on text clarity, stylistic awareness and repertoire development will be featured. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099A 6.00 World Music: Individual Instruction - Ashkenazi and Sephardic Vocal Music. Private voice lessons in Ashkenazi, Klezmer, Yiddish and Sephardic (especially Judeo-Spanish) singing and song repertoires. Emphasis on text clarity, stylistic awareness and

repertoire development will be featured. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099B 3.00 World Music: Individual Instruction - Balkan Vocal Music. Private instruction in the vocal techniques and repertoires of the Balkans with an emphasis on voice placement, vocal production and ornamentation. Students will develop the timbres and microtonal pitches typical of traditional repertoire from Bulgaria, Croatia, Macedonia, Serbia and Turkey. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099B 6.00 World Music: Individual Instruction - Balkan Vocal Music. Private instruction in the vocal techniques and repertoires of the Balkans with an emphasis on voice placement, vocal production and ornamentation. Students will develop the timbres and microtonal pitches typical of traditional repertoire from Bulgaria, Croatia, Macedonia, Serbia and Turkey. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099C 3.00 World Music: Individual Instruction - Country and Folk Fiddle Traditions. Private instruction in various folk fiddle traditions (Celtic, Klezmer, French-Canadian, country etc.) The course will concentrate on bowing and fingering techniques, repertoire development, tune mastery and stylistic integrity. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099C 6.00 World Music: Individual Instruction - Country and Folk Fiddle Traditions. Private instruction in various folk fiddle traditions (Celtic, Klezmer, French-Canadian, country etc.) The course will concentrate on bowing and fingering techniques, repertoire development, tune mastery and stylistic integrity. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099D 3.00 World Music: Individual Instruction - Dizi. Private instruction on the Chinese dizi (transverse bamboo flute) including basic and alternative finger techniques, embouchure development, the placement of the dimo membrane, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099D 6.00 World Music: Individual Instruction - Dizi. Private instruction on the Chinese dizi (transverse bamboo flute) including basic and alternative finger techniques, embouchure development, the placement of the dimo membrane, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099E 3.00 World Music: Individual Instruction - Early Music Wind Instruments. Private instruction in recorder, krumhorn and shawm including performance techniques, repertoire development, melodic figuration, improvisation and historical and regional style study. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099E 6.00 World Music: Individual Instruction - Early Music Wind Instruments. Private instruction in recorder, krumhorn and shawm including performance techniques, repertoire development, melodic figuration, improvisation and historical and regional style study. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099F 3.00 World Music: Individual Instruction - Flamenco Guitar. Private study of flamenco guitar including right-hand strumming patterns (rasqueado), idiomatic modal harmonic voicings and progressions, traditional forms (toques) and rhythmic cycles (compas), traditional solo variations (falsetas) and the practice of dance accompaniment. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099F 6.00 World Music: Individual Instruction - Flamenco Guitar. Private study of flamenco guitar including right-hand strumming patterns (rasqueado), idiomatic modal harmonic voicings and

progressions, traditional forms (toques) and rhythmic cycles (compas), traditional solo variations (falsetas) and the practice of dance accompaniment. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099G 3.00 World Music: Individual Instruction - Folk Guitar. Private instruction in folk guitar techniques including finger-picking, strumming patterns, counter melodies, alternate and open-string tunings and voicings, rhythmic styles and traditional accompaniment patterns. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099G 6.00 World Music: Individual Instruction - Folk Guitar. Private instruction in folk guitar techniques including finger-picking, strumming patterns, counter melodies, alternate and open-string tunings and voicings, rhythmic styles and traditional accompaniment patterns. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099H 3.00 World Music: Individual Instruction - Hand Percussion: Various Traditions. Private study of specific hand percussion traditions (i.e. Latin percussion, Cuban popular music (conga, bongo etc.), Cuban bata, celtic, tambora, frame drum, cajon etc.) including slap and finger techniques, tone production, idiomatic soloing and accompanying patterns for specific cultural repertoires. Open to non-majors. Appropriate lower level or permission of the instructor.

FA/MUSI 3099H 6.00 World Music: Individual Instruction - Hand Percussion: Various Traditions. Private study of specific hand percussion traditions (i.e. Latin percussion, Cuban popular music (conga, bongo etc.), Cuban bata, celtic, tambora, frame drum, cajon etc.) including slap and finger techniques, tone production, idiomatic soloing and accompanying patterns for specific cultural repertoires. Open to non-majors. Appropriate lower level or permission of the instructor.

FA/MUSI 3099I 3.00 World Music: Individual Instruction - Shakuhachi. Private study of the Japanese shakuhachi including fingering technique, articulation, tone production and repertoire development. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099I 6.00 World Music: Individual Instruction - Shakuhachi. Private study of the Japanese shakuhachi including fingering technique, articulation, tone production and repertoire development. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099J 3.00 World Music: Individual Instruction - Jembe. Private study of the West African jembe including technique, tone production, idiomatic soloing and accompanying patterns for the Mande repertoire and other recent cross-cultural applications. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099J 6.00 World Music: Individual Instruction - Jembe. Private study of the West African jembe including technique, tone production, idiomatic soloing and accompanying patterns for the Mande repertoire and other recent cross-cultural applications. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099K 3.00 World Music: Individual Instruction - Kora. Private study of the kora focusing on articulation, "groove" (kumbengo), ornamentation and improvised passagework (birimintingo) and standard repertoire from the Mande bardic tradition (jaliya). Open to non-majors. Prerequisite: Appropriate lower level or the permission of the instructor.

FA/MUSI 3099K 6.00 World Music: Individual Instruction - Kora. Private study of the kora focusing on articulation, "groove" (kumbengo), ornamentation and improvised passagework (birimintingo) and standard repertoire from the Mande bardic tradition (jaliya). Open to non-majors. Prerequisite: Appropriate lower level or the permission of the instructor.

FA/MUSI 3099L 3.00 World Music: Individual Instruction - Baglama. Private instruction in Turkish baglama (long-necked, plucked, folk lute with moveable frets) with an emphasis on regional playing styles and repertoire through knowledge of various tunings, modes, meters and mastery of left-hand (hit-ons, pull-offs etc.) and right-hand (plectrum strokes) techniques. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099L 6.00 World Music: Individual Instruction - Baglama. Private instruction in Turkish baglama (long-necked, plucked, folk lute with moveable frets) with an emphasis on regional playing styles and repertoire through knowledge of various tunings, modes, meters and mastery of left-hand (hit-ons, pull-offs etc.) and right-hand (plectrum strokes) techniques. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099M 3.00 World Music: Individual Instruction - Medieval and Renaissance Bowed Strings. Private instruction in medieval bowed strings (rebec, vielle, viol da gamba). This course seeks to develop a flexible technique and extensive knowledge of repertoire. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099M 6.00 World Music: Individual Instruction - Medieval and Renaissance Bowed Strings. Private instruction in medieval bowed strings (rebec, vielle, viol da gamba). This course seeks to develop a flexible technique and extensive knowledge of repertoire. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099O 3.00 World Music: Individual Instruction - 'Oud. Private study of the oud concentrating on performance techniques, developing sensibilities for microtonal tuning and idiomatic ornamentation, modal repertoire (maqam), improvisation (taqsim) and the standard compositional repertoire of various West Asian and North African traditions. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099O 6.00 World Music: Individual Instruction - 'Oud. Private study of the oud concentrating on performance techniques, developing sensibilities for microtonal tuning and idiomatic ornamentation, modal repertoire (maqam), improvisation (taqsim) and the standard compositional repertoire of various West Asian and North African traditions. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099P 3.00 World Music: Individual Instruction - Pipa. Private instruction in pipa (pear-shaped plucked lute). This course will introduce the student to alternative left hand fingering positions, the five finger tremolo, the two finger pi-pa technique, the bending of strings and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099P 6.00 World Music: Individual Instruction - Pipa. Private instruction in pipa (pear-shaped plucked lute). This course will introduce the student to alternative left hand fingering positions, the five finger tremolo, the two finger pi-pa technique, the bending of strings and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099Q 3.00 World Music: Individual Instruction - Koto. Private instruction in Japanese koto. This course will introduce the student to traditional repertoire and performance practice, hand positions, playing techniques and regional and historical variants. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099Q 6.00 World Music: Individual Instruction - Koto. Private instruction in Japanese koto. This course will introduce the student to traditional repertoire and performance practice, hand positions, playing techniques and regional and historical variants. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099R 3.00 World Music: Individual Instruction - Recorder. Private study in recorder with an emphasis on performance technique, transposition, ornamentation and repertoire. Use of the recorder as a important pedagogical instrument will be considered and appropriate repertoire studied. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099R 6.00 World Music: Individual Instruction - Recorder. Private study in recorder with an emphasis on performance technique, transposition, ornamentation and repertoire. Use of the recorder as a important pedagogical instrument will be considered and appropriate repertoire studied. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099S 3.00 World Music: Individual Instruction - Setar. Private study of the Persian setar (long necked lute) including technique, traditional repertoire (radif) and performance practice. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099S 6.00 World Music: Individual Instruction - Setar. Private study of the Persian setar (long necked lute) including technique, traditional repertoire (radif) and performance practice. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099T 3.00 World Music: Individual Instruction - Tabla. Private study of North Indian tabla drums including digital technique, tala (rhythmic structure) theory, accompaniment styles, solo repertoire and improvisatory practice. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099T 6.00 World Music: Individual Instruction - Tabla. Private study of North Indian tabla drums including digital technique, tala (rhythmic structure) theory, accompaniment styles, solo repertoire and improvisatory practice. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099U 3.00 World Music: Individual Instruction - Plucked Strings: Medieval and Renaissance. Private study of early music plucked strings: lute, harp, psaltery. Study will include playing techniques, acquisition of repertoire, improvisation, ornamentation and style awareness. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099U 6.00 World Music: Individual Instruction - Plucked Strings: Medieval and Renaissance. Private study of early music plucked strings: lute, harp, psaltery. Study will include playing techniques, acquisition of repertoire, improvisation, ornamentation and style awareness. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099V 3.00 World Music: Individual Instruction - Village Folk Vocal Styles. Private instruction in the vocal techniques and repertoires of various folk vocal traditions with an emphasis on repertoire development, vocal production and ornamentation. Repertoire will be chosen from various world music sources with an emphasis on the Canadian, American and British traditions. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099V 6.00 World Music: Individual Instruction - Village Folk Vocal Styles. Private instruction in the vocal techniques and repertoires of various folk vocal traditions with an emphasis on repertoire development, vocal production and ornamentation. Repertoire will be chosen from various world music sources with an emphasis on the Canadian, American and British traditions. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099W 3.00 World Music: Individual Instruction - World Rhythms for Drumkit. Private instruction on the drumset with an emphasis on developing fluency in the unique rhythmic patterns and grooves drawn from various world music traditions. Work will include odd meters, polyrhythmic forms, national dance styles (samba, reggae etc.)

and alternative performance techniques. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099W 6.00 World Music: Individual Instruction - World Rhythms for Drumkit. Private instruction on the drumset with an emphasis on developing fluency in the unique rhythmic patterns and grooves drawn from various world music traditions. Work will include odd meters, polyrhythmic forms, national dance styles (samba, reggae etc.) and alternative performance techniques. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099X 3.00 World Music: Individual Instruction - Xiao. Private instruction in xiao (notched vertical flute). This course will introduce the student to basic and alternative fingerings, embouchure development, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099X 6.00 World Music: Individual Instruction - Xiao. Private instruction in xiao (notched vertical flute). This course will introduce the student to basic and alternative fingerings, embouchure development, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099Y 3.00 World Music: Individual Instruction - Yangqin. Private instruction in yangqin (trapezoidal hammered dulcimer) including beater techniques, rhythmic figuration, ornamentation and regional genre studies. Standard Chinese notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099Y 6.00 World Music: Individual Instruction - Yangqin. Private instruction in yangqin (trapezoidal hammered dulcimer) including beater techniques, rhythmic figuration, ornamentation and regional genre studies. Standard Chinese notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099Z 3.00 World Music: Individual Instruction - Zhonghu and Erhu. Private instruction in Chinese erhu and zhonghu (two-stringed bowed lute) introducing left-hand fingerings, position shifts, various bowing techniques and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3099Z 6.00 World Music: Individual Instruction - Zhonghu and Erhu. Private instruction in Chinese erhu and zhonghu (two-stringed bowed lute) introducing left-hand fingerings, position shifts, various bowing techniques and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 3110 6.00 Composition Studio III. Students are encouraged to compose in contemporary idioms and to undertake exercises which expand their awareness of styles, methods, materials and notation systems. Hours vary. Prerequisites or corequisites: Foundation courses or permission of the course director.

FA/MUSI 3120 3.00 Song Writing and Repertoire. Students develop and explore aspects of the compositional process by dealing with melodic, rhythmic, harmonic, formal and textural considerations as they pertain to song writing. Students are required to produce a substantial number of original songs and analyze relevant material from the literature. The use of the multi-track recording process is studied as a compositional aid and as a means of producing pre-production demos. Materials fee. Prerequisites: Foundation courses.

FA/MUSI 3131 3.00 Jazz Composition and Arranging: Small Ensembles. A study of jazz compositional techniques of the past and present through analysis, transcription and performance. Aims of the course are development of a basic craft and experimentation leading towards a more personal expression. Projects for small ensembles are required and read by members of the class. Prerequisites: FA/MUSI 2201 3.00, FA/MUSI 2202 3.00 and FA/MUSI 2051 6.00, or permission of the course director.

FA/MUSI 3132 3.00 Jazz Composition and Arranging: Large Ensembles. A study of jazz compositional techniques of the past and present through analysis, transcription and performance. Aims of the course are development of a basic craft and experimentation leading towards a more personal expression. Projects for large ensembles are required and read by members of the class. Prerequisites: FA/MUSI 2201 3.00, FA/MUSI 2202 3.00 and FA/MUSI 2051 6.00, or permission of the course director.

FA/MUSI 3140 6.00 Digital and Electronic Media III. A continuation of work begun in FA/MUSI 2140 6.00 with an emphasis on the historical and contemporary use of digital and electronic music systems. Emphasis is on creative studio work using digital and electronic music systems in composition and performance. Prerequisite: FA/MUSI 2140 6.00 or equivalent, or permission of the course director. Enrolment limited. Materials fee: \$100.

FA/MUSI 3201 3.00 Fugal Style. An introduction to fugal composition including advanced work in tonal harmony and counterpoint. Students analyze compositions in fugal style, principally those of J.S. Bach with some regard to earlier and later developments, and learn to organize and execute compositions using the techniques of this genre. Prerequisite: FA/MUSI 2201 3.00. Prerequisite or corequisite: The former FA/MUSI 2220 6.00, or FA/MUSI 2200 6.00.

FA/MUSI 3202 3.00 Sonata Style. An introduction to composition in sonata form and related genres in advanced tonal harmonic style. Students analyze compositions in sonata style, principally those of Haydn, Mozart and Beethoven, with some regard to earlier and later developments, and learn to organize and execute compositions using the techniques of this genre. Prerequisite: FA/MUSI 2202 3.00. Prerequisite or corequisite: The former FA/MUSI 2220 6.00, or FA/MUSI 2200 6.00.

FA/MUSI 3210 6.00 An Introduction to Sonic Architecture and Design. This course introduces students to the complex world of sonic architecture and design. Through the manipulation, control and creation of digital instruments, the class will explore the musical and technical aspects of sonic theory and practice in the digital domain. Prerequisite: Foundation courses.

FA/MUSI 3220 3.00 Introduction to Temperament, Alternate Tunings and Microtonal Tuning Systems Using Computers and Synthesizers. This course deals with the historical, theoretical, aesthetic and practical aspects of various alternate and microtonal tuning systems. Mathematical relationships, practical applications, sonic characteristics and compositional aesthetics will be discussed. Students will be encouraged to create original systems and to perform and compose music using various temperaments. Prerequisite: Foundation courses.

FA/MUSI 3240 6.00 Instrumentation and Orchestration. A study of instruments, singly and in combination, with respect to their use in composition. The course emphasizes traditional instruments of the band and orchestra, though other types of instrumentation may be considered. The student's main work involves regular exercise in arranging or composing in a variety of styles. Prerequisites: FA/MUSI 3201 3.00 and FA/MUSI 3202 3.00.

FA/MUSI 3300 6.00 Music of World Cultures. An introduction, through listening and analysis, filmed or live demonstrations, and occasional field trips, to the musical traditions of specific nations and communities. The social practices, concepts and sound structures of the music, as well as the impact of contemporary recording technologies are explored. Prerequisite: Foundation courses. Degree credit exclusions: The former FA/MUSI 2310 6.00, FA/MUSI 3390B 6.00.

FA/MUSI 3310 6.00 Music in the Modern Era. A study of major musical developments from 1890 to 1950 in Europe and North America, with emphasis on the relationship between innovation and tradition and on problems of style and communication in an era of rapid social and cultural change. Prerequisites: Foundation courses, or permission of the course director for non-majors/minors.

AK/MUSI 3320 3.00 Music of Asia. An intensive treatment of musical traditions of East Asia, South Asia and the Middle East. Prerequisite: AK/

MUSI 2210 6.00 or AK/MUSI 2220 6.00, or equivalent, or permission of the music coordinator. Note: Not open to students who have taken AK/MUSI 3300 3.00 (3300 6.00).

FA/MUSI 3320 6.00 Music of India. Theoretical systems and contemporary performance styles in relation to one another and in the context of a number of closely related aspects of Indian culture. Prerequisites or corequisites: Foundation courses. Open to non-majors/minors by permission of the course director.

FA/MUSI 3340 6.00 History of European Music. A survey of the history of European music from 1590 to 1890, with particular attention to Italy, France, Austria and Germany. Important works of major composers are examined in detail with reference to the pertinent social and historical contexts. Prerequisite: Foundation courses. Degree credit exclusions: AK/MUSI 2220 6.00, and the former FA/MUSI 2220 6.00.

FA/MUSI 3350 6.00 Music of the Americas. A study of the various musical traditions that have been absorbed and transformed by the emerging civilizations of the New World. Topics include: the history of music in British North America; the blending of African, European and native idioms in Latin America and the Caribbean; the rise and development of jazz, blues and urban popular music including rock; the music and musical culture of minority groups; New World musics in their cultural context. (Equivalent to AK/MUSI 3440 6.00) Prerequisites: Foundation courses. Degree credit exclusion: the former FA/MUSI 2350 6.00, AK/MUSI 3440 6.00.

FA/MUSI 3360 6.00 Jazz History and Repertory Studies. Jazz history and repertory emphasizing the small group tradition in the US from the mid-1930s to the late 1960s. Various paradigms for jazz history, style analysis and criticism are examined, with attention to jazz as a repertory music as well as a musical process. Prerequisites: Foundation courses, or permission of the course director for non-majors/minors.

FA/MUSI 3370 3.00 Opera. A history of opera from its origins to the 20th century, exploring the interrelationship of music and drama. Production and staging techniques are discussed, and students are required to attend and comment critically upon all aspects of at least one live operatic performance.

FA/MUSI 3380 3.00 Western Art Song. A study of the interconnections between poetry and music in Western art song, particularly in the 19th and 20th century German Lied, French chanson and English/North American song.

AK/MUSI 3390E 6.00 Gender and Music. Examines the processes by which women are marginalized from the musical canon, after which we explore issues of gender, sexuality and performativity within non-Western and Western musical practices, past and present.

AK/MUSI 3430 3.00 Opera. The course deals with the history of opera from about 1600 to the present, including Romanticism, Realism, Symbolism and Expressionism; it emphasizes various issues such as musical and literary structures; opera as social and aesthetic commentary.) Prerequisite: AK/MUSI 2220 6.00, or for students with equivalent background, permission of the music coordinator. Note 1: All students are required to attend a Canadian Opera Company production. Note 2: Not open to students who have taken AK/MUSI 3430 3.00 or AK/MUSI 3430 6.00.

AK/MUSI 3450 3.00 Music in Popular Culture. After a comprehensive definition of popular music, the course investigates the cultural history and stylistic development of popular music in Europe and North America from the Middle Ages to the present. The bulk of the course deals with popular music in the 20th century including ragtime, jazz, blues, show music, country and western, commercial, folk music, rhythm 'n blues and rock. Note: Not open to students who have taken AK/MUSI 3450 6.00.

FA/MUSI 3450 3.00 Creative Applications of MIDI Technology. A major focus of the course is the mastery of MIDI technology as a means towards individual artistic expression. Class work includes regular assignments using a variety of instruments and techniques and demands both live and recorded performances. The use of MIDI-equipped mixers,

effects units, rhythm composers and CD + MIDI is explored. The long and short term implications of MIDI on the educational field is also considered. Materials fee. Prerequisites: Foundation courses; or FA/MUSI 2110 3.00 and FA/MUSI 2111 3.00.

FA/MUSI 3460 3.00 Music Engraving and Notation Using Computers. This course deals with aesthetic, theoretical and practical considerations involved in the production and printing of music scores, and develops skill in score layout, part extraction, preparation for publications, step time/MIDI input techniques, scanning and other relevant techniques. Prerequisite: Foundation courses.

FA/MUSI 3470 3.00 Pedagogical Applications of Computer Software in the Contemporary Music Curriculum. This course explores the recent and growing use of music software in teaching subjects such as ear training and rudiments, musicianship, theory, history and analysis. Computer-aided instruction and interactive tools are considered. Prerequisite: Foundation courses.

FA/MUSI 3600 6.00 Issues in Music Education. Explores and develops awareness of a variety of issues relating to teaching at the primary and secondary levels in the school system. Prerequisite: Department of Music core courses (FA/MUSI 1000 6.00, FA/MUSI 1200 9.00, FA/MUSI 2200 6.00, FA/MUSI 2201 3.00 and FA/MUSI 2202 3.00).

FA/MUSI 3601 3.00 Instrumental Music Education: Brass Instruments. Explores the teaching of brass instruments in the school system. Trumpet, trombone, French horn and tuba will be studied. Appropriate repertoire and pedagogical methods will be explored. Prerequisite: Department of Music core courses (FA/MUSI 1000 6.00, FA/MUSI 1200 9.00, FA/MUSI 2200 6.00, FA/MUSI 2201 3.00 and FA/MUSI 2202 3.00).

FA/MUSI 3602 3.00 Instrumental Music Education: Woodwind Instruments. Explores the art of teaching woodwind instruments (flute, oboe clarinet, bassoon and saxophone) in the school system. Appropriate repertoire and pedagogical methods will be explored. Prerequisite: Department of Music core courses (FA/MUSI 1000 6.00, FA/MUSI 1200 9.00, FA/MUSI 2201 3.00, FA/MUSI 2202 3.00 and FA/MUSI 2200 6.00).

FA/MUSI 3603 3.00 Instrumental Music Education: String Instruments. Examines the art of teaching string instruments (violin, viola, cello and double bass) in the school system. Appropriate repertoire and pedagogical methods will be examined. Prerequisite: Department of Music core courses (FA/MUSI 1000 6.00, FA/MUSI 1200 9.00, FA/MUSI 2201 3.00, FA/MUSI 2202 3.00 and FA/MUSI 2200 6.00).

FA/MUSI 3604 3.00 Vocal Music Education. Explores the art of teaching vocal music and directing choral ensembles at the primary and secondary school levels. Prerequisite: Department of Music core courses (MUSI 1000 6.00, MUSI 1200 9.00, MUSI 2201 3.00, MUSI 2202 3.00 and MUSI 2200 6.00).

FA/MUSI 3900A 3.00 Special Options I: The Body of Music I. This course focuses on employing movement and whole-body experience as the central vehicle for acquiring enhanced musical skills, sensibilities, creativity and the increased capacity to learn and grow as musicians. Prerequisite: Completion of first- and second-year core courses or instructor's permission.

FA/MUSI 3900B 3.00 Special Options I: The Body of Music II. This course brings whole-body learning to a study of musical shape, particularly to phrase, form, texture, style and quality of flow. There is an emphasis on the pedagogy of musicianship training. Prerequisite: Completion of first- and second-year core courses in music plus either FA/MUSI 3900A 3.00 or instructor's permission.

FA/MUSI 4000 6.00 Staging and Movement for Classical Singers. Provides an introduction to the in depth study of movement, stage style and manner and acting techniques for the classical singer with the potential for a professional career. Singers will be assigned appropriate repertoire, coached and staged in various scenes (solo and ensemble) from the standard repertoire. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020A 3.00 Classical Performance: Flute. Continuation of FA/MUSI 3025A 6.00, FA/MUSI 3025A 9.00 or FA/MUSI 3020A 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020A 6.00 Classical Performance: Flute. Continuation of FA/MUSI 3025A 6.00, FA/MUSI 3025A 9.00 or FA/MUSI 3020A 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020B 3.00 Classical Performance: Oboe. Continuation of FA/MUSI 3025A 6.00, FA/MUSI 3025A 9.00 or FA/MUSI 3020B 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020B 6.00 Classical Performance: Oboe. Continuation of FA/MUSI 3025A 6.00, FA/MUSI 3025A 9.00 or FA/MUSI 3020B 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020C 3.00 Classical Performance: Clarinet. Continuation of FA/MUSI 3025A 6.00, FA/MUSI 3025A 9.00 or FA/MUSI 3020C 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020C 6.00 Classical Performance: Clarinet. Continuation of FA/MUSI 3025A 6.00, FA/MUSI 3025A 9.00 or FA/MUSI 3020C 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020D 3.00 Classical Performance: Bassoon. Continuation of FA/MUSI 3025A 6.00, FA/MUSI 3025A 9.00 or FA/MUSI 3020D 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020D 6.00 Classical Performance: Bassoon. Continuation of FA/MUSI 3025A 6.00, FA/MUSI 3025A 9.00 or FA/MUSI 3020D 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020E 3.00 Classical Performance: Saxophone. Continuation of FA/MUSI 3025A 6.00, FA/MUSI 3025A 9.00 or FA/MUSI 3020E 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020E 6.00 Classical Performance: Saxophone. Continuation of FA/MUSI 3025A 6.00, FA/MUSI 3025A 9.00 or FA/MUSI 3020E 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020F 3.00 Classical Performance: French Horn. Continuation of FA/MUSI 3025B 6.00, FA/MUSI 3025B 9.00, or FA/MUSI 3020F 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020F 6.00 Classical Performance: French Horn. Continuation of FA/MUSI 3025B 6.00, FA/MUSI 3025B 9.00, or FA/MUSI 3020F 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020G 3.00 Classical Performance: Trumpet. Continuation of FA/MUSI 3025B 6.00, FA/MUSI 3025B 9.00, or FA/MUSI 3020G 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020G 6.00 Classical Performance: Trumpet. Continuation of FA/MUSI 3025B 6.00, FA/MUSI 3025B 9.00, or FA/MUSI 3020G 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020H 3.00 Classical Performance: Trombone. Continuation of FA/MUSI 3025B 6.00, FA/MUSI 3025B 9.00, or FA/MUSI 3020H 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020H 6.00 Classical Performance: Trombone. Continuation of FA/MUSI 3025B 6.00, FA/MUSI 3025B 9.00, or FA/MUSI 3020H 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020I 3.00 Classical Performance: Tuba. Continuation of FA/MUSI 3025B 6.00, FA/MUSI 3025B 9.00, or FA/MUSI 3020I 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020I 6.00 Classical Performance: Tuba. Continuation of FA/MUSI 3025B 6.00, FA/MUSI 3025B 9.00, or FA/MUSI 3020I 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020J 3.00 Classical Performance: Percussion. Continuation of FA/MUSI 3023 6.00, FA/MUSI 3023 9.00 or FA/MUSI 3020J 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020J 6.00 Classical Performance: Percussion. Continuation of FA/MUSI 3023 6.00, FA/MUSI 3023 9.00 or FA/MUSI 3020J 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020L 3.00 Classical Performance: Guitar. Continuation of FA/MUSI 3027 6.00, FA/MUSI 3027 9.00 or FA/MUSI 3020L 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020L 6.00 Classical Performance: Guitar. Continuation of FA/MUSI 3027 6.00, FA/MUSI 3027 9.00 or FA/MUSI 3020L 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020M 3.00 Classical Performance: Voice. Continuation of FA/MUSI 3024 6.00, FA/MUSI 3024 9.00 or FA/MUSI 3020M 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020M 6.00 Classical Performance: Voice. Continuation of FA/MUSI 3024 6.00, FA/MUSI 3024 9.00 or FA/MUSI 3020M 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020N 3.00 Classical Performance: Violin. Continuation of FA/MUSI 3026 6.00, FA/MUSI 3026 9.00 or FA/MUSI 3020N 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020N 6.00 Classical Performance: Violin. Continuation of FA/MUSI 3026 6.00, FA/MUSI 3026 9.00 or FA/MUSI 3020N 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020O 3.00 Classical Performance: Viola. Continuation of FA/MUSI 3026 6.00, FA/MUSI 3026 9.00 or FA/MUSI 3020O 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020O 6.00 Classical Performance: Viola. Continuation of FA/MUSI 3026 6.00, FA/MUSI 3026 9.00 or FA/MUSI 3020O 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020P 3.00 Classical Performance: Cello. Continuation of FA/MUSI 3026 6.00, FA/MUSI 3026 9.00 or FA/MUSI 3020P 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020P 6.00 Classical Performance: Cello. Continuation of FA/MUSI 3026 6.00, FA/MUSI 3026 9.00 or FA/MUSI 3020P 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020Q 3.00 Classical Performance: Double Bass. Continuation of FA/MUSI 3026 6.00, FA/MUSI 3026 9.00 or FA/MUSI 3020Q 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020Q 6.00 Classical Performance: Double Bass. Continuation of FA/MUSI 3026 6.00, FA/MUSI 3026 9.00 or FA/MUSI 3020Q 3.00. Corequisite: FA/MUSI 4024 3.00 or FA/MUSI 4025 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4020R 3.00 Classical Performance: Harp. Students receive private harp lessons. Corequisite: Enrolment in a major ensemble.

FA/MUSI 4020R 6.00 Classical Performance: Harp. Students receive private harp lessons. Corequisite: Enrolment in a major ensemble.

FA/MUSI 4020S 3.00 Classical Performance: Euphonium. Students receive private euphonium lessons. Corequisite: Enrolment in a major ensemble.

FA/MUSI 4020S 6.00 Classical Performance: Euphonium. Students receive private euphonium lessons. Corequisite: Enrolment in a major ensemble.

FA/MUSI 4022 3.00 York University Women's Chorus. This course is open to all qualified York University students. The York University Women's Chorus performs repertoire written especially for soprano and also voice ranges, and presents several concerts annually. Open to non-majors. Continuation of FA/MUSI 3022 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4024 3.00 York University Concert Choir. This course is open to all qualified York University students and offers performance training in the environment of a large choir. Continuation of FA/MUSI 3024 3.00. Prerequisites: Permission of the course director, by audition.

FA/MUSI 4025 3.00 York University Wind Symphony. This course is open to all qualified York University students and offers performance training in the environment of a large ensemble. Continuation of FA/MUSI 3025 3.00. Prerequisites: Permission of the course director, by audition.

FA/MUSI 4026 3.00 Orchestra. This course is open to all qualified York University students and offers performance training in the environment of a large ensemble. Continuation of FA/MUSI 3026 3.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4028B 3.00 York Brass Ensemble. Continuation of FA/MUSI 3028B 3.00. Corequisite: FA/MUSI 4020 3.00. Prerequisite: Permission of the course director, by permission.

FA/MUSI 4028G 3.00 York Guitar Ensemble. Continuation of FA/MUSI 3028G 3.00. Corequisite: FA/MUSI 4020 3.00. Prerequisite: Permission of the course director, by permission.

FA/MUSI 4028P 3.00 York Percussion Ensemble. Continuation of FA/MUSI 3028P 3.00. Corequisite: FA/MUSI 4020 3.00. Prerequisite: Permission of the course director, by permission.

FA/MUSI 4028S 3.00 York Chamber Strings. Continuation of FA/MUSI 3028S 3.00. Corequisite: FA/MUSI 4020 3.00. Prerequisite: Permission of the course director, by permission.

FA/MUSI 4028W 3.00 York Woodwind Ensemble. Continuation of FA/MUSI 3028W 3.00. Corequisite: FA/MUSI 4020 3.00. Prerequisite: Permission of the course director, by permission.

FA/MUSI 4029 6.00 Master Class in Performance II. An intensive course in performance highlighting historical context, style, interpretation, musicianship and performance practices. Designed for students who have the ability to pursue careers or graduate studies in performance. Open to all. Note: All FA/MUSI 4029 6.00 students participate in a weekly performance master class which includes lectures and practice in performance.

FA/MUSI 4030 3.00 Recital II. This course allows advanced students in performance to present themselves in the format of a concert recital.

FA/MUSI 4030 6.00 Recital II. This course allows advanced students in performance to present themselves in the format of a concert recital.

FA/MUSI 4031 6.00 Piano Improvisation and Contemporary Styles. Designed for pianists of all backgrounds interested in exploring a variety of improvisational practices and 20th-century techniques and styles. Students learn to develop a compositional orientation to improvisation which allows the free exploration and integration of materials and processes from all periods and cultures. Admission is by audition in September. Open to non-majors. Continuation of FA/MUSI 3031 6.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4032 6.00 Contemporary Musicianship and Improvisation. Designed to integrate musicianship training with work in composition and improvisation. Development of the skills, strategies and sensibilities required to achieve fluency in spontaneous solo and ensemble music making, and the development and refining of one's own musical voice are among the main course objectives. Admission is by audition in September. Continuation of FA/MUSI 3032 6.00. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4040 6.00 South Indian Music. Practical training in the performance styles of South Indian classical music. Some of the appropriate theory, terminology and cultural background is considered. A continuation of FA/MUSI 3040 6.00. Prerequisites: Permission of the course director, by audition.

FA/MUSI 4041 6.00 Philippine Kolintang Ensemble III. Practical training in the performance of Philippine Kolintang music. Some of the appropriate theory, terminology and cultural background is considered. A continuation of FA/MUSI 3041 6.00. Prerequisites: Permission of the course director.

FA/MUSI 4042 3.00 Gamelan Orchestra. Group instruction in the technique and performance of Indonesian Gamelan repertoire. Rhythmic and melodic techniques are developed while performing on various gongs, metallophones, flutes and drums of the Gamelan orchestra. Repertoire is memorized and ensemble performance practice is emphasized through public performance. A continuation of FA/MUSI 3042 3.00. Prerequisite: Permission of the course director. Open to majors and non-majors.

FA/MUSI 4043 3.00 West African Drum Ensemble. Practical instruction in the performance practice and repertoires of various West African cultures including Ewe, Dagamba, Mandinka and other Mande people. The songs and basic dance movements integral to these traditions will also be studied. FA/MUSI 1043 3.00 is open to non-majors. Appropriate lower level is required for upper-level registration.

FA/MUSI 4044 3.00 Celtic Canadian Folk Ensemble. Practical instruction in several vernacular fiddle-based musical traditions of North America. Some knowledge of fiddle, guitar, piano, harmonica or tin whistle is an asset. A continuation of FA/MUSI 3044 3.00. Prerequisite: Permission of the course director. Open to majors and non-majors.

FA/MUSI 4045 3.00 Klezmer Folk Ensemble. Practical performance instruction in the Klezmer musical tradition. Some knowledge of fiddle, guitar, piano or clarinet required. The course develops facility and repertoire in the improvisational styles associated with the Klezmer (Jewish Wedding Band) tradition of central Europe and the Middle East. A continuation of FA/MUSI 3045 3.00. Prerequisite: Permission of the course director. Open to majors and non-majors.

FA/MUSI 4046 3.00 African-American Musics: Ragtime, Blues, Boogie-Woogie and Barrelhouse Piano. Practical performance instruction in the African-American traditions of ragtime, blues, barrelhouse, boogie-woogie and stride piano styles. Students develop manual independence, rhythmic security, improvisation skills and stylistic awareness using repertoire chosen from the tradition. Both aural sources and written scores are consulted and used to recreate the music. A continuation of FA/MUSI 3046 3.00. Prerequisite: Permission of the course

director. Note: Open to majors and non-majors with appropriate skill level in piano playing.

FA/MUSI 4047 3.00 Chinese Classical Ensemble. Practical and repertoire studies in traditional Chinese orchestral techniques (chin, erhu etc.) Students learn and perform pieces from the repertoire while concentrating on appropriate instrumental techniques. A continuation of FA/MUSI 3047 3.00. Prerequisite: Permission of the course director. Open to majors and non-majors.

FA/MUSI 4048 3.00 Japanese Music. Practical and repertoire studies in traditional instrumental techniques (shakuhachi, koto etc.) Students concentrate on issues of performance such as tone colour, rhythmic accuracy and nuance, and ensemble performance. A continuation of FA/MUSI 3048 3.00. Prerequisite: Permission of the course director. Open to majors and non-majors.

FA/MUSI 4049 3.00 Cuban Music. A performance course dealing primarily with Cuban popular music styles. An in-depth examination of various Afro-Cuban traditional musics, which have had important influence on the popular styles, will also be presented. Ensembles concentrate on group dynamics and rhythmic interaction with an emphasis on rhythmic feel, style and groove. A continuation of FA/MUSI 3049 3.00. Prerequisite: Permission of the course director. Open to majors and non-majors.

FA/MUSI 4051 6.00 Jazz Workshop IV. A continuation and intensification of FA/MUSI 3051 6.00. Students receive applied training in performance workshops each week. Prerequisites: FA/MUSI 3051 6.00 and FA/MUSI 3059 6.00. Corequisite: FA/MUSI 4059 6.00.

FA/MUSI 4052 3.00 Jazz Orchestra IV. The York Jazz Orchestra performs traditional and contemporary jazz for large ensembles, including student compositions as well as music by noted jazz composers. Open to non-majors. Note: The Jazz Orchestra meets from September to April. Continuation of FA/MUSI 3052 3.00. Prerequisites: Permission of the course director, by audition.

FA/MUSI 4053 3.00 Jazz Choir IV. This course provides instruction in jazz choral techniques and emphasizes the development of vocal performance skills within the jazz tradition. Note: The Jazz Choir meets from September to April. Continuation of FA/MUSI 3053 3.00. Prerequisites: Permission of the course director, by audition.

FA/MUSI 4054A 3.00 Jazz Piano. This course focuses on performance dealing primarily with the tradition of jazz piano in both its solo and ensemble forms. Practical instruction in jazz piano performance includes an emphasis on developing stylistic fluency and repertoire competency. Prerequisite: Appropriate lower level or permission of the instructor for upper-level registration.

FA/MUSI 4054A 6.00 Jazz Piano. This course focuses on performance dealing primarily with the tradition of jazz piano in both its solo and ensemble forms. Practical instruction in jazz piano performance includes an emphasis on developing stylistic fluency and repertoire competency. Prerequisite: Appropriate lower level or permission of the instructor for upper-level registration.

FA/MUSI 4054B 3.00 Jazz Bass. This course focuses on performance techniques within the tradition of jazz bass as manifested in various historical and contemporary styles. Practical instruction in jazz bass playing includes an emphasis on developing proper technique, tone, intonation, harmonic conception, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054B 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4054B 6.00 Jazz Bass. This course focuses on performance techniques within the tradition of jazz bass as manifested in various historical and contemporary styles. Practical instruction in jazz bass playing includes an emphasis on developing proper technique, tone, intonation, harmonic conception, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054B 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4054C 3.00 Jazz Percussion. This course focuses on performance dealing primarily with the tradition of jazz percussion performance styles. Practical instruction in jazz drum “set” or “kit” includes an emphasis on developing proper technique, stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054C 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4054C 6.00 Jazz Percussion. This course focuses on performance dealing primarily with the tradition of jazz percussion performance styles. Practical instruction in jazz drum “set” or “kit” includes an emphasis on developing proper technique, stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054C 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4054D 3.00 Jazz Guitar. This course focuses on performance techniques within the tradition of jazz guitar as manifested in various historical and contemporary styles. Practical instruction in jazz guitar playing includes an emphasis on developing melodic technique, harmonic structure, stylistic integrity, comping fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054D 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4054D 6.00 Jazz Guitar. This course focuses on performance techniques within the tradition of jazz guitar as manifested in various historical and contemporary styles. Practical instruction in jazz guitar playing includes an emphasis on developing melodic technique, harmonic structure, stylistic integrity, comping fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054D 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4054E 3.00 Jazz Woodwind. This course focuses on performance techniques within the tradition of jazz woodwind (saxophone, clarinet, flute) as manifested in various historical and contemporary styles. Practical instruction in jazz woodwind playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054E 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4054E 6.00 Jazz Woodwind. This course focuses on performance techniques within the tradition of jazz woodwind (saxophone, clarinet, flute) as manifested in various historical and contemporary styles. Practical instruction in jazz woodwind playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054E 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4054F 3.00 Jazz Brass. This course focuses on performance techniques within the tradition of jazz brass (trumpet, trombone, tuba) as manifested in various historical and contemporary styles. Practical instruction in jazz brass playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054F 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4054F 6.00 Jazz Brass. This course focuses on performance techniques within the tradition of jazz brass (trumpet, trombone, tuba) as manifested in various historical and contemporary styles. Practical instruction in jazz brass playing includes an emphasis on developing tone, technique, harmonic sensitivity, stylistic integrity, melodic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054F 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4054G 3.00 Jazz Vocal. This course focuses on performance dealing primarily with the tradition of solo jazz singing. Practical instruction in jazz vocal performance includes an emphasis on developing stylistic fluency and repertoire competency. Prerequisite: Permission of the

instructor for FA/MUSI 1054G 3.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4054G 6.00 Jazz Vocal. This course focuses on performance dealing primarily with the tradition of solo jazz singing. Practical instruction in jazz vocal performance includes an emphasis on developing stylistic fluency and repertoire competency. Prerequisite: Permission of the instructor for FA/MUSI 1054G 6.00, appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4055 6.00 The Rhythm Section in Jazz. Provides an in depth study of the jazz rhythm section as a unique and fluid performance medium. Designed to improve and develop the performance abilities and interactive “creative” awareness of drummers, bassists, pianists and guitarist working in the jazz idiom. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4059 6.00 Jazz Theory and Musicianship IV. A continuation and intensification of FA/MUSI 3059 6.00. All students in FA/MUSI 4051 6.00 must be concurrently enrolled in FA/MUSI 4059 6.00. Qualified students, however, may elect to take FA/MUSI 4059 6.00 without concurrent enrolment in FA/MUSI 4051 6.00. Prerequisite: FA/MUSI 3059 6.00.

FA/MUSI 4070 3.00 Electro-Acoustic Orchestra. This course allows students to participate in a large electro-acoustic orchestra that will create (re-create) and perform both historical and contemporary repertoire using both the latest digital sound production hardware as well as traditional instruments. A participating student will be required to function as both performer and in at least one other capacity such as composer, arranger, improviser or conductor.

FA/MUSI 4080 3.00 Classical Piano Performance. Instruction and recital preparation in classical piano through individual lessons and master classes. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4080 6.00 Classical Piano Performance. Instruction and recital preparation in classical piano through individual lessons and master classes. Prerequisite: Permission of the course director, by audition.

FA/MUSI 4081 3.00 Piano Literature and Pedagogy. Literature and pedagogy of classical piano. Open to non-majors who have studied piano. Activities vary according to the level of skill and experience of the individual student. Prerequisite: Permission of the course director.

FA/MUSI 4082 3.00 Piano Accompanying. This course develops the pianist's ability to function as a sensitive and musical accompanist. Prerequisite: Permission of the course director.

FA/MUSI 4090 3.00 Middle Eastern Ensemble. Practical instruction in selected Middle Eastern classical and folk repertoires drawn from Arab, Persian and Turkish cultures. In addition to voice and percussion (frame drum, darabouka) instrumentation will include 'oud, setar (lute), violin and ney (reed flute). Prerequisite: Permission of the course director.

FA/MUSI 4091 3.00 World Music Chorus. A practical performance course which surveys selected polyphonic traditions from around the world. This course seeks to expand conceptions regarding vocal technique and production while exploring various compositional possibilities. Prerequisite: Permission of the course director.

FA/MUSI 4092 3.00 Early Music Ensemble. Practical instruction in selected repertoires drawn from Medieval and Renaissance sources. Ensembles will utilize voice, wind (recorders and gemhorns), string and percussion instruments. Prerequisite: Permission of the instructor.

FA/MUSI 4093 3.00 Balkan Music Ensemble. Practical instruction in selected repertoires drawn from the rich and varied Balkan region sources. Ensembles will utilize voice, string, wind and percussion instruments. Prerequisite: Permission of the instructor.

FA/MUSI 4094 3.00 Escola de Samba. Practical instruction in established and newly-composed repertoires drawn from the confluence of Afrolatin folk/popular music and jazz. The course will provide fundamental instruction in Latin folk music traditions. Prerequisite:

Appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4095 3.00 Caribbean Ensemble. Practical instruction in repertoires drawn from the island cultures of the Caribbean region with a focus on the steel pan tradition. The course will provide fundamental instruction in steel pan or drum repertoire, techniques and traditions. Prerequisite: Appropriate lower level or permission of the instructor required for upper-level registration.

FA/MUSI 4099A 3.00 World Music: Individual Instruction - Ashkenazi and Sephardic Vocal Music. Private voice lessons in Ashkenazi, Klezmer, Yiddish and Sephardic (especially Judeo-Spanish) singing and song repertoires. Emphasis on text clarity, stylistic awareness and repertoire development will be featured. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099A 6.00 World Music: Individual Instruction - Ashkenazi and Sephardic Vocal Music. Private voice lessons in Ashkenazi, Klezmer, Yiddish and Sephardic (especially Judeo-Spanish) singing and song repertoires. Emphasis on text clarity, stylistic awareness and repertoire development will be featured. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099B 3.00 World Music: Individual Instruction - Balkan Vocal Music. Private instruction in the vocal techniques and repertoires of the Balkans with an emphasis on voice placement, vocal production and ornamentation. Students will develop the timbres and microtonal pitches typical of traditional repertoire from Bulgaria, Croatia, Macedonia, Serbia and Turkey. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099B 6.00 World Music: Individual Instruction - Balkan Vocal Music. Private instruction in the vocal techniques and repertoires of the Balkans with an emphasis on voice placement, vocal production and ornamentation. Students will develop the timbres and microtonal pitches typical of traditional repertoire from Bulgaria, Croatia, Macedonia, Serbia and Turkey. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099C 3.00 World Music: Individual Instruction - Country and Folk Fiddle Traditions. Private instruction in various folk fiddle traditions (Celtic, Klezmer, French-Canadian, country etc.) The course will concentrate on bowing and fingering techniques, repertoire development, tune mastery and stylistic integrity. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099C 6.00 World Music: Individual Instruction - Country and Folk Fiddle Traditions. Private instruction in various folk fiddle traditions (Celtic, Klezmer, French-Canadian, country etc.) The course will concentrate on bowing and fingering techniques, repertoire development, tune mastery and stylistic integrity. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099D 3.00 World Music: Individual Instruction - Dizi. Private instruction on the Chinese dizi (transverse bamboo flute) including basic and alternative finger techniques, embouchure development, the placement of the dimo membrane, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099D 6.00 World Music: Individual Instruction - Dizi. Private instruction on the Chinese dizi (transverse bamboo flute) including basic and alternative finger techniques, embouchure development, the placement of the dimo membrane, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099E 3.00 World Music: Individual Instruction - Early Music Wind Instruments. Private instruction in recorder, krumhorn and shawm including performance techniques, repertoire development, melodic figuration, improvisation and historical and regional style study. Open to

non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099E 6.00 World Music: Individual Instruction - Early Music Wind Instruments. Private instruction in recorder, krumhorn and shawm including performance techniques, repertoire development, melodic figuration, improvisation and historical and regional style study. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099F 3.00 World Music: Individual Instruction - Flamenco Guitar. Private study of flamenco guitar including right-hand strumming patterns (rasqueado), idiomatic modal harmonic voicings and progressions, traditional forms (toques) and rhythmic cycles (compas), traditional solo variations (falsetas) and the practice of dance accompaniment. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099F 6.00 World Music: Individual Instruction - Flamenco Guitar. Private study of flamenco guitar including right-hand strumming patterns (rasqueado), idiomatic modal harmonic voicings and progressions, traditional forms (toques) and rhythmic cycles (compas), traditional solo variations (falsetas) and the practice of dance accompaniment. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099G 3.00 World Music: Individual Instruction - Folk Guitar. Private instruction in folk guitar techniques including finger-picking, strumming patterns, counter melodies, alternate and open-string tunings and voicings, rhythmic styles and traditional accompaniment patterns. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099G 6.00 World Music: Individual Instruction - Folk Guitar. Private instruction in folk guitar techniques including finger-picking, strumming patterns, counter melodies, alternate and open-string tunings and voicings, rhythmic styles and traditional accompaniment patterns. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099H 3.00 World Music: Individual Instruction - Hand Percussion: Various Traditions. Private study of specific hand percussion traditions (i.e. Latin percussion, Cuban popular music (conga, bongo etc.), Cuban bata, celtic, tambora, frame drum, cajon etc.) including slap and finger techniques, tone production, idiomatic soling and accompanying patterns for specific cultural repertoires. Open to non-majors. Appropriate lower level or permission of the instructor.

FA/MUSI 4099H 6.00 World Music: Individual Instruction - Hand Percussion: Various Traditions. Private study of specific hand percussion traditions (i.e. Latin percussion, Cuban popular music (conga, bongo etc.), Cuban bata, celtic, tambora, frame drum, cajon etc.) including slap and finger techniques, tone production, idiomatic soling and accompanying patterns for specific cultural repertoires. Open to non-majors. Appropriate lower level or permission of the instructor.

FA/MUSI 4099I 3.00 World Music: Individual Instruction - Shakuhachi. Private study of the Japanese shakuhachi including fingering technique, articulation, tone production and repertoire development. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099I 6.00 World Music: Individual Instruction - Shakuhachi. Private study of the Japanese shakuhachi including fingering technique, articulation, tone production and repertoire development. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099J 3.00 World Music: Individual Instruction - Jembe. Private study of the West African jembe including technique, tone production, idiomatic soloing and accompanying patterns for the Mande repertoire and other recent cross-cultural applications. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099J 6.00 World Music: Individual Instruction - Jembe. Private study of the West African jembe including technique, tone production, idiomatic soloing and accompanying patterns for the Mande repertoire and other recent cross-cultural applications. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099K 3.00 World Music: Individual Instruction - Kora. Private study of the kora focusing on articulation, "groove" (kumbengo), ornamentation and improvised passagework (birimintingo) and standard repertoire from the Mande bardic tradition (jaliya). Open to non-majors.

FA/MUSI 4099K 6.00 World Music: Individual Instruction - Kora. Private study of the kora focusing on articulation, "groove" (kumbengo), ornamentation and improvised passagework (birimintingo) and standard repertoire from the Mande bardic tradition (jaliya). Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099L 3.00 World Music: Individual Instruction - Baglama. Private instruction in Turkish baglama (long-necked, plucked, folk lute with moveable frets) with an emphasis on regional playing styles and repertoire through knowledge of various tunings, modes, meters and mastery of left-hand (hit-ons, pull-offs etc.) and right-hand (plectrum strokes) techniques. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099L 6.00 World Music: Individual Instruction - Baglama. Private instruction in Turkish baglama (long-necked, plucked, folk lute with moveable frets) with an emphasis on regional playing styles and repertoire through knowledge of various tunings, modes, meters and mastery of left-hand (hit-ons, pull-offs etc.) and right-hand (plectrum strokes) techniques. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099M 3.00 World Music: Individual Instruction - Medieval and Renaissance Bowed Strings. Private instruction in medieval bowed strings (rebec, vielle, viol da gamba). This course seeks to develop a flexible technique and extensive knowledge of repertoire. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099M 6.00 World Music: Individual Instruction - Medieval and Renaissance Bowed Strings. Private instruction in medieval bowed strings (rebec, vielle, viol da gamba). This course seeks to develop a flexible technique and extensive knowledge of repertoire. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099O 3.00 World Music: Individual Instruction - 'Oud. Private study of the oud concentrating on performance techniques, developing sensibilities for microtonal tuning and idiomatic ornamentation, modal repertoire (maqam), improvisation (taqsim) and the standard compositional repertoire of various West Asian and North African traditions. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099O 6.00 World Music: Individual Instruction - 'Oud. Private study of the oud concentrating on performance techniques, developing sensibilities for microtonal tuning and idiomatic ornamentation, modal repertoire (maqam), improvisation (taqsim) and the standard compositional repertoire of various West Asian and North African traditions. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099P 3.00 World Music: Individual Instruction - Pipa. Private instruction in pipa (pear-shaped plucked lute). This course will introduce the student to alternative left hand fingering positions, the five finger tremolo, the two finger pi-pa technique, the bending of strings and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099P 6.00 World Music: Individual Instruction - Pipa. Private instruction in pipa (pear-shaped plucked lute). This course will introduce the student to alternative left hand fingering positions, the five finger tremolo, the two finger pi-pa technique, the bending of strings and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099Q 3.00 World Music: Individual Instruction - Koto. Private instruction in Japanese koto. This course will introduce the student to traditional repertoire and performance practice, hand positions, playing techniques and regional and historical variants. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099Q 6.00 World Music: Individual Instruction - Koto. Private instruction in Japanese koto. This course will introduce the student to traditional repertoire and performance practice, hand positions, playing techniques and regional and historical variants. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099R 3.00 World Music: Individual Instruction - Recorder. Private study in recorder with an emphasis on performance technique, transposition, ornamentation and repertoire. Use of the recorder as a important pedagogical instrument will be considered and appropriate repertoire studied. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099R 6.00 World Music: Individual Instruction - Recorder. Private study in recorder with an emphasis on performance technique, transposition, ornamentation and repertoire. Use of the recorder as a important pedagogical instrument will be considered and appropriate repertoire studied. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099S 3.00 World Music: Individual Instruction - Setar. Private study of the Persian setar (long necked lute) including technique, traditional repertoire (radif) and performance practice. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099S 6.00 World Music: Individual Instruction - Setar. Private study of the Persian setar (long necked lute) including technique, traditional repertoire (radif) and performance practice. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099T 3.00 World Music: Individual Instruction - Tabla. Private study of North Indian tabla drums including digital technique, tala (rhythmic structure) theory, accompaniment styles, solo repertoire and improvisatory practice. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099T 6.00 World Music: Individual Instruction - Tabla. Private study of North Indian tabla drums including digital technique, tala (rhythmic structure) theory, accompaniment styles, solo repertoire and improvisatory practice. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099U 3.00 World Music: Individual Instruction - Plucked Strings: Medieval and Renaissance. Private study of early music plucked strings: lute, harp, psaltery. Study will include playing techniques, acquisition of repertoire, improvisation, ornamentation and style awareness. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099U 6.00 World Music: Individual Instruction - Plucked Strings: Medieval and Renaissance. Private study of early music plucked strings: lute, harp, psaltery. Study will include playing techniques, acquisition of repertoire, improvisation, ornamentation and style awareness. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099V 3.00 World Music: Individual Instruction - Village Folk Vocal Styles. Private instruction in the vocal techniques and repertoires of various folk vocal traditions with an emphasis on repertoire development, vocal production and ornamentation. Repertoire will be chosen from various world music sources with an emphasis on the Canadian, American and British traditions. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099V 6.00 World Music: Individual Instruction - Village Folk Vocal Styles. Private instruction in the vocal techniques and repertoires of various folk vocal traditions with an emphasis on repertoire development, vocal production and ornamentation. Repertoire will be chosen from various world music sources with an emphasis on the Canadian, American and British traditions. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099W 3.00 World Music: Individual Instruction - World Rhythms for Drumkit. Private instruction on the drumset with an emphasis on developing fluency in the unique rhythmic patterns and grooves drawn from various world music traditions. Work will include odd meters, polyrhythmic forms, national dance styles (samba, reggae etc.) and alternative performance techniques. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099W 6.00 World Music: Individual Instruction - World Rhythms for Drumkit. Private instruction on the drumset with an emphasis on developing fluency in the unique rhythmic patterns and grooves drawn from various world music traditions. Work will include odd meters, polyrhythmic forms, national dance styles (samba, reggae etc.) and alternative performance techniques. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099X 3.00 World Music: Individual Instruction - Xiao. Private instruction in xiao (notched vertical flute). This course will introduce the student to basic and alternative fingerings, embouchure development, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099X 6.00 World Music: Individual Instruction - Xiao. Private instruction in xiao (notched vertical flute). This course will introduce the student to basic and alternative fingerings, embouchure development, tuning techniques, melodic figuration and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099Y 3.00 World Music: Individual Instruction - Yangqin. Private instruction in yangqin (trapezoidal hammered dulcimer) including beater techniques, rhythmic figuration, ornamentation and regional genre studies. Standard Chinese notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099Y 6.00 World Music: Individual Instruction - Yangqin. Private instruction in yangqin (trapezoidal hammered dulcimer) including beater techniques, rhythmic figuration, ornamentation and regional genre studies. Standard Chinese notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099Z 3.00 World Music: Individual Instruction - Zhonghu and Erhu. Private instruction in Chinese erhu and zhonghu (two-stringed bowed lute) introducing left-hand fingerings, position shifts, various bowing techniques and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4099Z 6.00 World Music: Individual Instruction - Zhonghu and Erhu. Private instruction in Chinese erhu and zhonghu (two-stringed bowed lute) introducing left-hand fingerings, position shifts, various bowing techniques and regional genre studies. Standard Chinese jianpu notation will be used. Open to non-majors. Prerequisite: Appropriate lower level or permission of the instructor.

FA/MUSI 4110 6.00 Composition Studio IV. A continuation of FA/MUSI 3110 6.00. Advanced work in composition, analysis and current music-

theoretic ideas of relevance to the composer. Prerequisites: FA/MUSI 3110 6.00 and permission of the course director. Prior or concurrent courses in the theory and literature of 20th-century music, such as FA/MUSI 3310 6.00 or FA/MUSI 4300 3.00 are strongly recommended.

AK/MUSI 4135 3.00 Listening: Issues in Auditory Cognition. Our perception of sound surpasses the quality of sensory information: it results from mental processing, or "auditory cognition". Topics include: memory for music and speech, auditory illusions, linguistic theory, psychoacoustics and timbre. Knowledge of music is recommended but not required. Classes involve lectures, demonstrations and discussions. Prerequisites: General psychology prerequisites. Degree credit exclusion: AK/PSYC 4135 3.00.

Cross-listed to: AK/MUSI 4135 3.00 and AK/PSYC 4160 3.00 and AS/PSYC 4160 3.00 and SC/PSYC 4160 3.00

FA/MUSI 4140 6.00 Composing for Film. Advanced composition studies involving the creation of recorded soundtracks for motion picture (formats will vary depending on project - i.e. film, video, DV, Internet, Multimedia Applications, Mini-DV, Firewire Port, Random Access, Final Cut Pro, Quicktime etc.). During the course, students will complete several composition projects and sync them to picture. Prerequisite: Permission of the course director.

FA/MUSI 4150 6.00 Digital Recording, Editing and Composition. This course deals with digital composition techniques. Included are topics such as: hard disk recording, destructive and non-destructive editing, non-linear editing, digital signal processing, digital audio sampling, multipass processing, processor smoothing, effects portamento, sample looping, crossfading and other additional rubrics. Prerequisites: Foundation courses and permission of the course director.

FA/MUSI 4200 3.00 Topics in Advanced Theory and Analysis. A seminar in contemporary musical analysis emphasizing the comprehensive investigation of complete musical works. Drawing on such perspectives as set theory or Schenkerian reduction, the course introduces the student to research problems in theory and analysis from various perspectives. Prerequisite: A minimum grade of B in a 3000-level theory course.

FA/MUSI 4300A 3.00 Studies in Contemporary Music. TBA

FA/MUSI 4320 3.00 Honours Seminar. Researchers are motivated by problems which reflect basic issues in intellectual history, humanities, science and social science. In this course, pilot projects introduce the broad range of research tools which several centuries of theory and academic scholarship have made available to musical study. Prerequisite: A minimum grade of B in an upper-level studies course.

FA/MUSI 4370 3.00 Music of Canada. Canadians tend to be sharply aware of the derivative aspects of their culture; yet the physiognomy of Canadian music taken as a whole is unique. This course studies selected aspects of Canadian musical achievements which offer perspectives on our national situation. Prerequisite: FA/MUSI 3350 6.00, or FA/MUSI 3310 6.00, or permission of the course director.

AK/MUSI 4390 3.00 Independent Study in Music. Open to advanced students only, this course will give the highly motivated music student an opportunity to pursue intensive study on his/her own under the guidance of a departmental instructor. Prerequisites: 78 credits or equivalent preparation, and permission of the music coordinator and Chair of fine arts. Note: Not open to students who have taken AK/MUSI 4390 3.00 or AK/MUSI 4390 6.00 in the same subject area.

AK/MUSI 4390 6.00 Independent Study in Music. Open to advanced students only, this course will give the highly motivated music student an opportunity to pursue intensive study on his/her own under the guidance of a departmental instructor. Prerequisites: 78 credits or equivalent preparation, and permission of the music coordinator and Chair of fine arts. Note: Not open to students who have taken AK/MUSI 4390 3.00 or AK/MUSI 4390 6.00 in the same subject area.

FA/MUSI 4399 3.00 Special Topics in the Graduate Program. Fourth-year undergraduates who have the necessary background may apply to

take certain courses offered in the graduate program. Prerequisites: Permission of both the graduate program director and the course director; a minimum grade of B+ in an upper-level studies course.

FA/MUSI 4590 3.00 Honours Project in Music. A special project option open to fourth-year students who have shown an exceptional ability to study independently and who have designed a course that cannot be accommodated elsewhere in the department's offerings. At the end of the year, the student's work is evaluated on the basis of one or more of the following: a recital, composition, research paper, or lecture-recital. Note: See departmental calendar for specific requirements. Prerequisite: Permission of the curriculum committee.

FA/MUSI 4590 6.00 Honours Project in Music. A special project option open to fourth-year students who have shown an exceptional ability to study independently and who have designed a course that cannot be accommodated elsewhere in the department's offerings. At the end of the year, the student's work is evaluated on the basis of one or more of the following: a recital, composition, research paper, or lecture-recital. Note: See departmental calendar for specific requirements. Prerequisite: Permission of the curriculum committee.

FA/MUSI 4590B 6.00 Honours Project II.

FA/MUSI 4600 6.00 Sonic Enhancement of Healing and Learning. A seminar exploring the use of sound, in conjunction with colour and other subtle energies, as tools for the enhancement of healing, learning and creative activity in the context of recent literature from the disciplines of metaphysics, physics, biology, psychology, phonology, thanatology, colour theory and music composition. Prerequisite: An upper-level studies course, or permission of the course director.

Natural Science – Atkinson, Glendon and Pure and Applied Science

Atkinson:

Office:

School of Analytic Studies and Information Technology
2005 Technology Enhanced Learning Building, Tel: 416-736-5232, Fax:
416-736-5188, e-mail: sasit@yorku.ca

Coordinator of Science and Technology Studies:

E. Hamm

Associate Professors Emeriti:

L.M. Bianchi, W.L. Hine

Assistant Professors:

E. Hamm, D. Lungu

Special Assistant Professor:

R. Dyer

Sessional Assistant Professor:

T. Abraham

Note: AK/NATS courses are part of Atkinson's general education requirement. General education courses do not fulfill elective requirements.

Note: Natural science courses are part of the general education requirements of the Atkinson Faculty and York University. The Atkinson natural science courses are administered by the Science and Technology Studies Program. These courses aim to introduce students who are not majoring in the sciences to some of the most important aspects of scientific thinking, to the character of scientific judgements and to the place of science in society. Atkinson's natural science courses emphasize that a proper appreciation of the content of science requires a consideration of the larger historical, philosophical, social and political contexts of science. Unless otherwise stated the following courses do not require a specific prior knowledge of mathematics and science.

Note: Students who have successfully completed humanities, social science and mathematics/modes of reasoning may take a science and technology studies course to fulfill the natural science general education requirement. Exclusion: Science and technology studies and general

science majors may not take AK/STS 1010 6.00 or AK/STS 2010 6.00 to satisfy their natural science general education requirement.

Glendon:

Department Offices/Bureaux du département :

160-161 York Hall 416-487-6732

Chair of the Department/Directeur du département :

Y. Frenette

Professors/Professeurs titulaires :

A. Baudot, B.N. Olshen

Professors Emeriti/Professeurs émérites :

A. Sangster, Natural Science; S. Zimmerman, Natural Science

Associate Professors/Professeurs agrégés :

J. Couchman, A.D.J. Hopkins, B.B. Price, M.-F. Silver

Associate Professor Emeritus/Professeurs agrégés émérite :

D. Schiff, Natural Science

Assistant Professor/Professeur adjoint :

J. Martel

Note: Courses whose numbers have 1 or 2 as the first digit are open to first-year students.

N.B. : Les cours dont le numéro commence par le chiffre 1 ou 2 sont ouverts aux étudiants de première année.

Science:

Division Office:

126 Chemistry Building, 416-736-5021

Director of the Division:

P.A. Delaney

Professors:

N. Bartel, R.A. Jarrell, L.E. Licht, M.L. McCall, I.C. McDade, J. Sapp

Professors Emeriti:

J. Heddle, R. Koehler

Associate Professor:

S. Jeffers

Assistant Professor:

P. Hall

Associate Lecturers:

E.C. Gardonio, N. Smith, B. Wall, P.J. Wilson

Faculty of Pure and Applied Science Courses in Natural Science

The natural science courses are designed, as part of the general education program, to acquaint those students not intending to be professionally concerned with science with the outlook, methods and some of the achievements of science. The individual courses offered approach this objective by selecting a particular area, problem or aspect of science in which the operations of the scientific enterprise can be studied in some detail.

The courses may be broadly classified into four areas, within which some overlap occurs, resulting in degree credit exclusions as noted. However, in certain circumstances, such exclusions are petitionable. The four categories are as follows:

a) History and philosophy of science and technology (with science laboratories and/or tutorials): SC/NATS 1710 6.00, SC/NATS 1730 6.00, SC/NATS 1760 6.00;

b) Biological science: SC/NATS 1610 6.00, SC/NATS 1620 6.00, SC/NATS 1650 6.00, SC/NATS 1660 6.00, SC/NATS 1680 6.00, SC/NATS 1690 6.00, SC/NATS 1695 6.00, SC/NATS 1850 6.00;

c) Environmental science: SC/NATS 1640 6.00, SC/NATS 1770 6.00, SC/NATS 1840 6.00;

d) Physical science: SC/NATS 1720 6.00 (also has a psychological component), SC/NATS 1740 6.00, SC/NATS 1750 6.00, SC/NATS 1780 6.00 (has an environmental aspect), SC/NATS 1790 6.00, SC/NATS 1810 6.00, SC/NATS 1820 6.00, SC/NATS 1830 6.00.

The natural science courses are intended primarily for non-science majors. Courses in biology, chemistry, earth and atmospheric science, physics and astronomy and other science disciplines are described