The following proposals, received on DAP between June 16-31, 2010, have now been approved.
For more information on the DAP process see the Academic Handbook at http://www.uwo.ca/univsec/handbook

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BRESICA UNIVERSITY COLLEGE

FRENCH

*Effective **September 1, 2011,** Brescia University College is to introduce the following new 2nd year half courses in French as alternatives to the current full year course*

French 2605F/G: Reading Cultures I – *please note that this was submitted as A/B but it is already on main campus as an F/G and cannot be something different at an affiliated university college.*
French 2606F/G: Reading Cultures II – *please note that this was submitted as A/B but it is already on main campus as an F/G and cannot be something different at an affiliated university college.*
French 2905A/B: Language and Reading
French 2906A/B: Language and Expression

French 2605F/G: Reading Cultures I
This course enables students to master literary reading, including the understanding of the major aspects of French and Francophone literatures and cultures, their particular histories as well as their relationship to the larger discipline of arts and humanities. The course provides tools for textual analysis, and improves written and oral communication in French.
Antirequisite(s): French 2600E
Prerequisite(s): French 1900E or French 1910 or permission of the Department of Modern Languages, based on Placement Test.
3 lecture/tutorial hours, 0.5 course
(Brescia)

French 2606F/G: Reading Cultures II
This course enables students to master literary reading, including the understanding of the major aspects of French and Francophone literatures and cultures, their particular histories as well as their relationship to the larger discipline of arts and humanities. The course provides tools for textual analysis, and improves written and oral communication in French.
Antirequisite(s): French 2600E
Prerequisite(s): French 1900E or French 1910 or permission of the Department of Modern Languages, based on Placement Test.
3 lecture/tutorial hours, 0.5 course
(Brescia)

French 2905A/B: Language and Reading
Intensive grammar review with an emphasis on textual analysis and understanding various forms of writing. One hour oral practice in the language laboratory.
Antirequisite(s): French 2101, 2900
Prerequisite(s): French 1900E or French 1910 or permission of the Department of Modern Languages, based on Placement Test.
3 or 4 lecture/tutorial hours, 0.5 course

French 2906A/B: Language and Expression
A review of selected elements of grammar with an emphasis on written and oral expression. One hour oral practice in the language laboratory.
Antirequisite(s): French 2101, 2900
Prerequisite(s): French 1900E or French 1910 or permission of the Department of Modern Languages, based on Placement Test.
3 or 4 lecture/tutorial hours, 0.5 course

PHILOSOPHY

*That effective **September 1, 2010,** Philosophy 2203E: History of Scientific Thought be added at Brescia.*

Philosophy 2203E: History of Scientific Thought
A general historical survey of ideas in the physical and biological sciences from antiquity to the early 20th century. This course will also examine issues in scientific methodology as well as the impact of scientific ideas on society.
Antirequisite(s): History of Science 2200E, the former History 200E
3 hours, 1.0 course.
(Brescia, Huron, King's)

SOCIOLOGY

*Effective **September 1, 2011**, the requirement of completion of a Community Development application and its deadline, and the stipulation of limited enrolment, will be added to the Admission Requirements of the following program and modules at Brescia University College which involve service learning and a placement:*

Certificate in Community Development
Honors Specialization in Families and Communities (passed by Senate)
Honors Specialization in Community Development in a Global Context (passed by Senate)
Honors Specialization in Crime and Communities (passed by Senate)
Major in Community Development (p. 370)

In the Calendar page for the Certificate in Community Development (page 79), the following text will be added to the end of the Admission Requirements paragraph:
"To be admitted into the Certificate in Community Development, the student is required to complete and submit a Community Development application form by April 15 before the beginning of the program. Enrolment in this program is limited. Meeting the minimum requirements does not guarantee that applicants will be admitted. Priority will be given to students already registered at Brescia."

In the Calendar pages for the modules listed above (pp. 369-370), the following text is to be added to the end of the Admission Requirements paragraph:
"To register in this module, students are required to submit a Community Development application form by April 15 before the beginning of the student's third year. Enrolment in this module is limited. Meeting the minimum requirements does not guarantee that students wishing to transfer into this module will be offered enrolment. Priority will be given to students already registered at Brescia."

FACULTY OF EDUCATION

EDUCATION

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in ABORIGINAL STUDIES for the SENIOR Grades, be introduced by the Faculty of Education.*

To be introduced:

EDUC 5230 Curriculum & Pedagogy in ABORIGINAL STUDIES for the SENIOR Grades
An introduction to Aboriginal Studies as a school subject in the senior secondary grades. Curriculum, pedagogical approaches, relevant theories of teaching and learning, and issues in Native Studies education are examined.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in VOCAL MUSIC for the INTERMEDIATE Grades, be introduced by the Faculty of Education.*

To be introduced:

EDUC 5137 Curriculum & Pedagogy in VOCAL MUSIC for the INTERMEDIATE Grades
A focus on the creative process in integrated and learner-centered classrooms. Topics include the development of a philosophy of music education and its relationship to general principles of education, and the acquisition of the understandings, skills, and language required to teach music in intermediate classrooms.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, EDUC 5451Q/S Health Education for Physical Education Teachers, be introduced by the Faculty of Education.*

To be introduced:

EDUC 5451Q/S Health Education for Physical Education Teachers
Intended for Teacher Candidates in IS Health & Physical Education, this course focuses on the Health requirements of Ontario's revised (2010) Health & Physical Education curriculum. Selected topics, strategies, and resources for teaching Health in upper elementary and secondary schools are emphasized.
Two hours per week, .25 credit. Offered first or second term.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in MATHEMATICS for the SENIOR Grades, be introduced by the Faculty of Education.*

EDUC 5236 Curriculum & Pedagogy in MATHEMATICS for the SENIOR Grades
An introduction to the theory and practice of the teaching of mathematics in the senior secondary grades, including a focus on instructional strategies, educational resources, critical appraisal of curriculum documents, and issues in mathematics education reform. Integration of relevant ideas and content from psychology, sociology, and research in mathematics education.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in ABORIGINAL STUDIES for the INTERMEDIATE Grades, be introduced by the Faculty of Education.*

EDUC 5130 Curriculum & Pedagogy in ABORIGINAL STUDIES for the INTERMEDIATE Grades
An introduction to Aboriginal Studies as a school subject in the intermediate grades. Curriculum, pedagogical approaches, relevant theories of teaching and learning, and issues in Native Studies education are examined.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course be introduced by the Faculty of Education.*

EDUC 5131 Curriculum & Pedagogy in ART for the INTERMEDIATE Grades
An examination of current theories of art education and the conditions necessary for an effective art program at the intermediate level. Workshops, readings, and assignments focus on the unique characteristics of adolescent art production and response.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in FAMILY STUDIES for the INTERMEDIATE Grades, be introduced by the Faculty of Education.*

EDUC 5132 Curriculum & Pedagogy in FAMILY STUDIES for the INTERMEDIATE Grades
A focus on curriculum concepts and materials appropriate for teaching about individuals and families in the intermediate grades. Topics include selection, organization, and evaluation of subject matter, teaching strategies, and resource materials. Additional emphasis on short-term and long-term planning of the Family Studies curriculum.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in GENERAL SCIENCE for the INTERMEDIATE Grades, be introduced by the Faculty of Education.*

EDUC 5133 Curriculum & Pedagogy in GENERAL SCIENCE for the INTERMEDIATE Grades
An introduction to the nature of science and technology education, how students learn science, and contemporary curricula for science and technology in the intermediate grades. Appropriate teaching strategies and instructional materials are examined. Readings, activities, laboratory work, and oral and written assignments are integral parts of the course.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in GEOGRAPHY for the INTERMEDIATE Grades, be introduced by the Faculty of Education.*

EDUC 5134 Curriculum & Pedagogy in GEOGRAPHY for the INTERMEDIATE Grades
Knowledge, skills, and methodologies appropriate for the successful teaching and learning of Geography in the intermediate grades. Examination of teaching strategies and resources is complemented by readings and activities designed to promote insight, critical thinking, and reflection-on-action.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in HEALTH & PHYSICAL EDUCATION for the INTERMEDIATE Grades, be introduced by the Faculty of Education.*

EDUC 5135 Curriculum & Pedagogy in HEALTH & PHYSICAL EDUCATION for the INTERMEDIATE Grades
Knowledge, skills, and methodologies appropriate for the successful teaching and learning of Geography in the intermediate grades. Examination of teaching strategies and resources is complemented by readings and activities designed to promote insight, critical thinking, and reflection-on-action.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in MATHEMATICS for the INTERMEDIATE Grades, be introduced by the Faculty of Education.*

EDUC 5136 Curriculum & Pedagogy in MATHEMATICS for the INTERMEDIATE Grades
An introduction to exemplary practices in the teaching of mathematics in the intermediate grades. Participants engage in collaborative activities designed to develop deeper understandings of the doing, teaching, and learning of mathematics. Special emphasis on non-routine activities, accessible and pleasurable mathematics, learning tools, critical appraisal and reflective practice.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in RELIGIOUS EDUCATION for the INTERMEDIATE Grades, be introduced by the Faculty of Education.*

EDUC 5138 Curriculum & Pedagogy in RELIGIOUS EDUCATION for the INTERMEDIATE Grades
An examination of the religious education curriculum for the intermediate grades in Ontario Catholic schools and of the foundations of religious learning in a faith-based learning and teaching environment. Emphasis on theological background, religious literacy, pedagogical skill, curriculum design, and the effective planning and teaching of the religious education curriculum.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in ART for the SENIOR Grades, be introduced by the Faculty of Education.*

EDUC 5231 Curriculum & Pedagogy in ART for the SENIOR Grades
An exploration of current and historical theories of art education, including conditions necessary for an effective art program at the senior level. Emphasis on teaching techniques and curriculum development with special attention to contemporary issues in art education such as multiculturalism and the role of imagery in contemporary culture.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in GENERAL SCIENCE for the SENIOR Grades, be introduced by the Faculty of Education.*

EDUC 5233 Curriculum & Pedagogy in GENERAL SCIENCE for the SENIOR Grades

An introduction to theoretical perspectives on the nature of science and science education, and to curriculum and pedagogy in science for the senior grades. Topics include constructivist, cognitive, behavioural, and social theories of science learning, and examination of teaching strategies and relevant resources.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in GEOGRAPHY for the SENIOR Grades, be introduced by the Faculty of Education.*

EDUC 5234 Curriculum & Pedagogy in GEOGRAPHY for the SENIOR Grades
An introduction to curriculum design and approaches to the teaching and learning of geography in the senior secondary school grades. Current issues in geography and social science education are examined, as are assessment and evaluation procedures and the use of geotechnologies and other resources.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in HEALTH & PHYSICAL EDUCATION for the SENIOR Grades, be introduced by the Faculty of Education*

EDUC 5235 Curriculum & Pedagogy in HEALTH & PHYSICAL EDUCATION for the SENIOR Grades
An examination and application of instructional theories, teaching strategies, and evaluation techniques for physical education in the senior grades. Topics include curriculum development, evaluation of resource materials, cultural diversity, student motivation, and classroom management.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in VOCAL MUSIC for the SENIOR Grades, be introduced by the Faculty of Education.*

EDUC 5237 Curriculum & Pedagogy in VOCAL MUSIC for the SENIOR Grades
A critical examination of contemporary learning theories in music education for the senior grades. Emphasis on pedagogy; curriculum design, development and assessment; resources and repertoire in vocal music; and teaching in the diverse classroom.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in RELIGIOUS EDUCATION for the SENIOR Grades, be introduced by the Faculty of Education.*

EDUC 5238 Curriculum & Pedagogy in RELIGIOUS EDUCATION for the SENIOR Grades
An examination of ecclesiastical, constitutional, catechetical, and political contexts surrounding the Ontario Catholic Religious Education Curriculum, and of theories of adolescent spirituality, faith, and moral development. Teacher Candidates are encouraged to understand teaching as a vocation and the role of the teacher as scholar-practitioner and reflective practitioner.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, EDUC 5446 Q/S Teaching History Using Primary Sources, be introduced by the Faculty of Education.*

EDUC 5446 Q/S Teaching History Using Primary Sources
Calendar Copy: A hands-on, social science laboratory approach to the use of primary sources in teaching secondary school History. Student-centered learning, inquiry skills, and problem-solving skills are emphasized.
Two hours per week, .25 credit. Offered first or second term.

*That effective **March 1, 2010,** a new course, The Classroom as Art Studio, be introduced by the Faculty of Education.*

EDUC 5449 Q/S The Classroom as Art Studio
The teaching of art in a process-centred, problem-solving environment conducive to creativity and discovery. Students will engage in hands-on art-making activities in a setting designed to model a studio approach to teaching art. Emphasis on pedagogical strategies and resources, and the critical and reflective phases of the art-making process.
Two hours per week, .25 credit. Offered first or second term.

*That effective **March 1, 2010,** a new course, Curriculum & Pedagogy in FAMILY STUDIES for the SENIOR Grades, be introduced by the Faculty of Education.*

EDUC 5232 Curriculum & Pedagogy in FAMILY STUDIES for the SENIOR Grades
A focus on the theoretical premises of planning and implementing suitable curricula in the various areas of Family Studies at the senior level, and on instructional strategies, learning activities, and curriculum development. Attention to resources, assessment and evaluation, and current issues in Family Studies education.
Two hours per week, 0.5 credit.

*That effective **March 1, 2010,** a new course, Historical and Cultural Studies in Art Education , be introduced by the Faculty of Education.*

EDUC 5450 Q/S Historical and Cultural Studies in Art Education
Approaches to the meaningful integration of art history and cultural phenomena. Exploration of premodernist, modernist, and postmodernist theories connecting the study of artistic production with artistic response in school classrooms, community galleries, and civic museums. Attention to Canadian Aboriginal art and to integrating art with other school subjects.
Two hours per week, 0.25 credit. Offered first or second term.

*That effective **March 1, 2010,** a new course, EDUC 5452 Q/S A Pedagogy of Multiliteracies, be introduced by the Faculty of Education.*

EDUC 5452 Q/S A Pedagogy of Multiliteracies
An introduction to multiliteracies as they relate to teaching and learning the English language arts. Emphasis on how multimodal texts can support meaning making, engaging students as both consumers and producers of new technologies, and on bridging in-school and out-of-school literacies.

*Effective **September 1, 2010,** the Intermediate/Senior and Technological Education programs be revised to include an additional half-course equivalent.*

Core Credits:
All students are required to complete the following Foundations credits:
0.75 credits: Social Foundations of Education 5002
0.75 credits: Educational Psychology and Special Education 5005

Intermediate/Senior and Technological Education Programs: In addition to the Core Credits and Practicum (EDUC 5001, 1.0 credit), students will complete:

1.0 credit: Curriculum and Pedagogy in Secondary Schools (teaching subject 1)
1.0 credit: Curriculum and Pedagogy in Secondary Schools (teaching subject 2)
0.50 credits: required/recommended co-curricular courses
0.25 credits: one choice from Equity/Diversity/Social Justice Electives
0.75 credits: electives (choose Religious Education 5446Q/S if you wish to teach in Roman Catholic School Districts)

*Effective **September 1, 2011,** EDUC 5001 Practicum will be reinstated.*

EDUC 5001 Practicum
The practicum is integral to teacher education, offering teacher candidates opportunities to learn first-hand about schools, classrooms, curriculum, students, and teachers. The practicum consists of four components: one day per week of classroom observation or other professional activity; three block practica (3 weeks + 3 weeks + 4 weeks); a weekly seminar with a Faculty Advisor; a two-week "transition to professional practice" at the end of the academic year.
1.0 credit

That effective **March 1, 2010,** a new course, *EDUC 5447Q/S Supporting Inquiry Science,* be introduced by the Faculty of Education.

EDUC 5447Q/S Supporting Inquiry Science
The theory and practice of designing inquiry-based learning opportunities for students in grades 7-12 science. Emphasis on safety in the laboratory, behind the scenes laboratory set-up, and field-work safety and set-up in the context of planning and assessing inquiry activities.
Two hours/week, .25 credit. Offered first or second term.

FACULTY OF HEALTH SCIENCES

NURSING

*Effective **September 1, 2010,** Microbiology and Immunology 3800 (Microbiology and Immunology) be withdrawn from the curricula of the Western-Fanshawe Collaborative BScN and Compressed Time Frame BScN programs, and replaced with Microbiology and Immunology 3810W (Microbiology and Immunology for Nursing Students).*

WESTERN-FANSHAWE COLLABORATIVE NURSING PROGRAM
Program
Third Year
Nursing 3318A/B, 3319A/B, 3361A/B, 3362A/B, 3371A/B, 3372A/B
Microbiology and Immunology 3810W
1.0 full course elective*

COMPRESSED TIME FRAME BScN PROGRAM
Program
Enrolment in the nursing courses is limited. The University is unable to guarantee registration in any particular course and reserves the right to withdraw course offerings.

Courses:
Nursing 1101W
Nursing 1102W
Nursing 1103W
Nursing 2201X
Nursing 2202X
Nursing 2203B
Nursing 2204B
Nursing 3331
Nursing 3332
Nursing 3300
Nursing 3319A/B
Nursing 4441W
Nursing 4442W
Nursing 4496W/X
Pathology 2420A
Pharmacology 2060A/B
Microbiology and Immunology 3810W

FACULTY OF MUSIC

MUSIC

*Effective **September 1, 2010,** Music 2874Q/R/S/T, Group Tuba Instruction, be introduced in the Don Wright Faculty of Music.*

Music 2874Q/R/S/T, Group Tuba Instruction Both practical and pedagogical elements of tuba instruction will be covered. Materials and procedures will be appropriate for individual study as well as group instruction.
26 hours of instruction. 0.25 course

FACULTY OF SCIENCE

ASTRONOMY

*That effective **September 1, 2010,** the Major in Planetary Science module be changed as shown below.*

MAJOR IN PLANETARY SCIENCE
Admission Requirements
Completion of first-year requirements, including the following courses, each with a minimum mark of 60%: Physics (1028A/B or 1301A/B or 1401A/B or 1501A/B) and (1029A/B or 1302A/B or 1402A/B or 1502A/B), or the former Physics 1020 or 1024 or 1026;(Calculus 1000A/B or 1100A/B) and (Calculus 1301A/B or Calculus 1501A/B), or Applied Mathematics 1413.
Module
6.0 courses:
0.5 course: Astronomy 2201A/B.
0.5 course: Physics 2700A/B.
1.0 course: Earth Sciences 2200A/B, 2206A/B.
0.5 course: Planetary Science 3380A/B.
3.5 courses from: Astronomy 2021A/B, 2801A/B, Physics 2101A/B, 2102A/B, 2110A/B, 2128A/B, 2129A/B, 2810A/B, 2910F/G, 3151A/B, 3200A/B, 3300A/B, 3400A/B, 3926F/G, the former Physics 2900E, Earth Sciences 2123A/B (if
Earth Sciences 1023A/B has not been taken), any Earth Sciences course in the range 2200-2299 not already taken, Earth Sciences 3310A/B, 3313A/B, 3314A/B, 3315A/B, 3321A/B, 3369A/B, 4400A/B, 4421A/B, 4424A/B, 4431A/B,
Planetary Science 4830A/B.
Note: The above courses may have prerequisites that are not included in the module.

*That effective **September 1, 2010,** the Honors Specialization in Planetary Science module be changed as shown below.*

HONORS SPECIALIZATION IN PLANETARY SCIENCE
Admission Requirements
Completion of first-year requirements with no failures. Students must have an average of at least 70% in 3.0 principal courses, with no mark in these principal courses below 60%:
Physics (1028A/B or 1301A/B or 1401A/B or 1501A/B) and (1029A/B or 1302A/B or 1402A/B or 1502A/B), or the former Physics 1020 or 1024 or 1026;(Calculus 1000A/B or 1100A/B) and (Calculus 1501A/B (preferred) or Calculus 1301A/B), or Applied Mathematics 1413; plus 1.0 additional course.
Module
10.0 courses:
0.5 course: Astronomy 2201A/B.
0.5 course: Physics 2700A/B.
1.0 course: Earth Sciences 2200A/B, 2206A/B.
1.5 courses: Planetary Science 3380A/B, 4490E.
6.5 courses from: Astronomy 2801A/B, Physics 2101A/B, 2102A/B, 2110A/B, 2128A/B, 2129A/B, 2810A/B, 2910F/G, 3151A/B, 3200A/B, 3300A/B, 3400A/B, 3926F/G, the former Physics 2900E, Earth Sciences 2123A/B (if Earth Sciences 1023A/B has not been taken), any Earth Sciences course in the range 2200-

2299 not already taken, Earth Sciences 3310A/B, 3313A/B, 3314A/B, 3315A/B, 3321A/B, 3369A/B, 4400A/B, 4421A/B, 4424A/B, 4431A/B, Planetary Science 4830A/B.
Note: The above courses may have prerequisites that are not included in the module.

*That effective **September 1, 2010,** the Minor in Planetary Science module be changed as shown below.*

MINOR IN PLANETARY SCIENCE
Admission Requirements
Completion of first-year requirements, including the following courses each with a mark of at least 60%: Physics (1028A/B or 1301A/B or 1401A/B or 1501A/B) and (1029A/B or 1302A/B or 1402A/B or 1502A/B), or the former Physics 1020 or 1024 or 1026; (Calculus 1000A/B or 1100A/B) and (Calculus 1301A/B or Calculus 1501A/B), or Applied Mathematics 1413.

Module
4.0 courses:
0.5 course: Astronomy 2201A/B or the former Astronomy 221a/b.
0.5 course: Physics 2700A/B.
1.0 course: Earth Sciences 2200A/B, 2206A/B.
0.5 course: Planetary Science 3380A/B.
1.5 courses from: Astronomy 2021A/B, 2801A/B, Physics 2101A/B, 2102A/B, 2110A/B, 2128A/B, 2129A/B, 2810A/B, 2910F/G, the former Physics 2900E, Earth Sciences 2123A/B (if Earth Sciences 1023A/B has not been taken), any Earth Sciences course in the range 2200-2299 not already taken, Earth Sciences 3310A/B, 3313A/B, 3314A/B, 3315A/B, 3321A/B, 3369A/B, Planetary Science 4830A/B.
Note: The above courses may have prerequisites that are not included in the module.

CHEMISTRY

*That effective **September 1, 2011,** the course requirements for the Specialization in Chemistry module increase from 9.0 to 10.0 and that the entrance requirements to this module be updated to reflect the changes in first year Science offerings.*

Admission Requirements
Completion of first year requirements, including the following 3.0 courses: 1.0 course: Chemistry 1100A/B and Chemistry 1200B (with an average in the two of at least 60%), or the former Chemistry 1050, 1020, 020 with a minimum mark of 60%, or the former Chemistry 023 with a minimum mark of 70%; 1.0 course: Physics (1028A/B or 1301A/B or 1501A/B) and Physics (1029A/B or 1302A/B or 1502A/B), with an average in the two half courses of at least 60%; or the former Physics 1020, 1024, with a minimum mark of 60%; 1.0 course from: Calculus 1000A/B or 1100A/B plus 0.5 course from Applied Mathematics 1201A/B or the former Calculus 1201A/B, Calculus 1301A/B, 1501A/B, Mathematics 1600A/B or the former Linear Algebra 1600A/B (with an average mark in the two of at least 60%); or Applied Mathematics 1413; or Mathematics 1225A/B plus 1229A/B (with an average mark in the two of at least 80%); or Mathematics 1225A/B plus Applied Mathematics 1201A/B or the former Calculus 1201A/B (with an average mark in the two of at least 80%); or the former Mathematics 030 with a mark of at least 80%.

Specialization in Chemistry
Module
10.0 courses:
6.0 courses: Chemistry 2271A, 2272F, 2273A , 2374A (or the former 2284B), 2281G, 2283G, 2384B (or the former 2274A), 3300F/G, 3371F, 3372F/G, 3373F, 3374A/B.
0.5 course from: Biochemistry 2280A, Chemistry 2223B, 4493A/B.
2.0 courses (at least 1.0 of which must be at the 4000 level, or 0.5 course at the 4000 level if Chemistry 4493A/B is chosen from the list above) from: Chemistry 2210A/B, 3320A/B, 3330F/G, 3364A/B, 3370A/B, 3384F/G, 3391A/B, 3393A/B, 4400A/B, 4441A/B, 4444A/B, 4466B, 4471A/B, 4472A/B, 4473A/B, 4474A/B, 4481A/B, 4483A/B, 4493A/B, 4494A/B, Applied Mathematics 2811B, 2813B, Calculus 2302A/B, 2303A/B, and Applied Mathematics 2402A.
1.5 course: Chemistry 4491E.

*That effective **September 1, 2010,** entrance requirements to the major module in Chemistry be changed to reflect the new, year 1 course offerings in the Faculty of Science.*

MAJOR IN CHEMISTRY
Admission Requirements
Completion of first year requirements, including the following 3.0 courses: 1.0 course: Chemistry 1100A/B and Chemistry 1200B (with an average in the two of at least 60%), or the former Chemistry 1050, 1020, 020 with a minimum mark of 60%, or the former Chemistry 023 with a minimum mark of 70%;

1.0 course: Physics (1028A/B or 1301A/B or 1501A/B) and Physics (1029A/B or 1302A/B or 1502A/B), with an average in the two half courses of at least 60%; or the former Physics 1020 or 1024with a minimum mark of 60%;

1.0 course from: Calculus 1000A/B or 1100A/B plus 0.5 course from Applied Mathematics 1201A/B or the former Calculus 1201A/B, Calculus 1301A/B, 1501A/B, Mathematics 1600A/B or the former Linear Algebra 1600A/B (with an average mark in the two of at least 60%); or Applied Mathematics 1413; or Mathematics 1225A/B plus 1229A/B (with an average mark in the two of at least 80%); or Mathematics 1225A/B plus Applied Mathematics 1201A/B or the former Calculus 1201A/B (with an average mark in the two of at least 80%); or the former Mathematics 030 with a mark of at least 80%.

*That effective **September 1, 2011,** entrance requirements to the minor module in Chemistry be changed to reflect the new, year 1 course offerings in the Departments of Biology, Chemistry and Physics.*

Admission Requirements
Completion of first year requirements, including the following 2.0 courses: 1.0 course: Chemistry 1100A/B and Chemistry 1200B (with an average in the two of at least 60%), or the former Chemistry 1050, 1020, 020 with a minimum mark of 60%, or the former Chemistry 023 with a minimum mark of 70%;

1.0 course from: Calculus 1000A/B or 1100A/B plus 0.5 course from Applied Mathematics 1201A/B or the former Calculus 1201A/B, Calculus 1301A/B, 1501A/B, Mathematics 1600A/B or the former Linear Algebra 1600A/B; or Applied Mathematics 1413; or Mathematics 1225A/B plus 1229A/B (with an average mark in the two of at least 80%); or Mathematics 1225A/B plus Applied Mathematics 1201A/B or the former Calculus 1201A/B; or the former Mathematics 030.

*That effective **September 1, 2011,** the course requirements for the Honors Specialization in Biochemistry and Chemistry be changed to reflect a change in the research courses, which are now 1.5 courses and to change the admission requirements to reflect the new course offerings in the Faculty of Science.*

Admission Requirements
Completion of first year requirements with no failures. Students must have an average of at least 70% in 3.0 principal courses, including:
1.0 course: Chemistry 1100A/B and Chemistry 1200B (with an average in the two of at least 60%), or the former Chemistry 1050, 1020, 020 with a minimum mark of 60%, or the former Chemistry 023 with a minimum mark of 70%; 1.0 course: Biology 1001A and 1002B (with an average in the two of at least 60%), or the former Biology 1222 or 1223, with a minimum mark of 60%; 1.0 course from: Calculus 1000A/B or 1100A/B plus 0.5 course from Applied Mathematics 1201A/B or the former Calculus 1201A/B, Calculus 1301A/B, 1501A/B, Mathematics 1600A/B or the former Linear Algebra 1600A/B (with an average mark in the two of at least 60%); or Applied Mathematics 1413; or Mathematics 1225A/B plus 1229A/B (with an average mark in the two of at least 80%); or Mathematics 1225A/B plus Applied Mathematics 1201A/B or the former Calculus 1201A/B (with an average mark in the two of at least 80%); or the former Mathematics 030 with a mark of at least 80%.
1.0 course: Physics (1028A/B or 1301A/B or 1501A/B) and Physics (1029A/B or 1302A/B or 1502A/B), with an average in the two half courses of at least 60%; or the former Physics 1020, 1024, with a minimum mark of 60%, is also required but is not considered to be a principal course.

Note: Biology 1201A with a minimum mark of 70% can be used to replace Biology 1001A, and Biology 1202B with a minimum mark of 70% can be used to replace Biology 1002B.

Module
11.0 courses:
6.0 courses: Chemistry 2271A, 2272F, 2273A, 2374A (or the former 2284B), 2281G, 2283G, 2384B (or the former 2274A), 3300F/G, 3371F, 3372F/G, 3373F, 3374A/B.
2.5 courses: Biology 2581B, Biochemistry 2280A, 3380G, 3381A, 3382B.

1.0 courses: Biochemistry 4400F, 4410A, 4420B, 4430B, 4435B, 4440A, 4445F/G, 4463G, 4465A or Microbiology and Immunology 4700B.
1.5 course from: Chemistry 4491E, Biochemistry 4483E.

*That effective **September 1, 2011,** the course requirements for the Honors Specialization in Chemistry module increase from 9.0 to 10.0 and that the entrance requirements to this module be updated to reflect the changes in first year Science offerings.*

HONORS SPECIALIZATION IN CHEMISTRY
Admission Requirements
Completion of first year requirements with no failures. Students must have an average of at least 70% in 3.0 principal courses, including:
1.0 course: Chemistry 1100A/B and Chemistry 1200B (with an average in the two of at least 60%), or the former Chemistry 1050, 1020, 020 with a minimum mark of 60%, or the former Chemistry 023 with a minimum mark of 70%; 1.0 course: Physics (1028A/B or 1301A/B or 1501A/B) and Physics (1029A/B or 1302A/B or 1502A/B), with an average in the two half courses of at least 60%; or the former Physics 1020, 1024, with a minimum mark of 60%; 1.0 course from: Calculus 1000A/B or 1100A/B plus 0.5 course from Applied Mathematics 1201A/B or the former Calculus 1201A/B, Calculus 1301A/B, 1501A/B, Mathematics 1600A/B or the former Linear Algebra 1600A/B (with an average mark in the two of at least 60%); or Applied Mathematics 1413; or Mathematics 1225A/B plus 1229A/B (with an average mark in the two of at least 80%); or Mathematics 1225A/B plus Applied Mathematics 1201A/B or the former Calculus 1201A/B (with an average mark in the two of at least 80%); or the former Mathematics 030 with a mark of at least 80%.

Module
10.0 courses:
6.0 courses: Chemistry 2271A, 2272F, 2273A , 2374A (or the former 2284B), 2281G, 2283G, 2384B (or the former 2274A), 3300F/G, 3371F, 3372F/G, 3373F, 3374A/B.
0.5 course from: Biochemistry 2280A, Chemistry 2223B, 4493A/B.
2.0 courses (at least 1.0 of which must be at the 4000 level, or 0.5 course at the 4000 level if Chemistry 4493A/B is chosen from the listabove) from: Chemistry 2210A/B, 3320A/B, 3330F/G, 3364A/B, 3370A/B, 3384F/G, 3391A/B, 3393A/B, 4400A/B, 4441A/B, 4444A/B, 4466B, 4471A/B, 4472A/B, 4473A/B, 4474A/B, 4481A/B, 4483A/B, 4493A/B, 4494A/B, Applied Mathematics 2811B, 2813B, Calculus 2302A/B, 2303A/B, and Applied Mathematics 2402A.
1.5 course: Chemistry 4491E.

COMBINED HBA/SCIENCE

*Effective **September 1, 2010,** the Combined Science/HBA, offered by the Richard Ivey School of Business and the Faculty of Science, be revised.*

The completion of these combined degrees takes five academic years. Students apply for the combined degree program during the HBA 1st year, typically their third year of University. To be eligible for consideration for admission to this program, students must complete: a full first year (5.0 courses), including all the principal courses with the appropriate marks required for admission to an Honors Specialization offered by the Faculty of Science; a second year (5.0 courses), including 4.0 courses of their Honors Specialization module with a minimum average mark of 70 % and no mark less than 60 % in these modular courses, and
Business Administration 2257 with a minimum mark of 70 %. Because entrance to the program is competitive and limited, students must achieve a minimum two-year (10.0 course) average of 80%. Demonstrated participation in extracurricular and/or community activities, leadership, and work experience are also taken into consideration.

Students applying to the Richard Ivey School of Business Advanced Entry Opportunity (AEO) are also eligible to be considered for the combined degree program.

Year 1
5.0 courses including:
·all the required courses with the appropriate marks needed for admission to an Honors Specialization offered by the Faculty of Science;
·1.0 first year course from Category B

Year 2
·4.0 courses from an Honors Specialization offered by the Faculty of Science
·Business Administration 2257

Year 3 (HBA1)
The third year of the undergraduate program in Business Administration consists of an integrated set of courses (8.25 courses) designed to give a basic understanding of the functions and the interrelationships of the major areas of management, as well as to develop problem-solving and action-planning skills.

All students will take: Business Administration 3300K, 3301K, 3302K, 3303K, 3304K, 3307K, 3311K, 3316K, 3321K, 3322K, 3323K.

No substitute for any of the above courses is permitted under any circumstances.

Years 4 and 5 (HBA2 Requirements can be taken over year 4 or 5 - no course is restricted to either year) 2.0 courses:
·International Perspective Requirement: Business Administration 4505A/B - Global Environment of Business
·Corporations and Society Perspective Requirement: at least one 0.5 course from Business Administration 4521A/B, 4522A/B, 4523A/B or other business elective as determined and approved by the HBA Program Director to satisfy this requirement.
·Applied Project Requirement: At least one of Ivey Consulting Project Business Administration 4430 (1.0 course) or Ivey New Venture Project Business Administration 4410 (1.0 course).
·3.0 additional business elective courses.

Years 4 and 5 (Honors Science)
6.0 courses from an Honors Specialization offered by the Faculty of Science

Notes:
1. The standard breadth and essay requirements for a BSc degree must be satisfied.
2. When the Honors Specialization requires fewer than 6.0 courses be taken in years 4 and 5, students will take additional business elective credits to ensure that a total of 11.0 courses is completed in years 4 and 5.

Program Requirements
Students registered in the combined program are expected to abide by all guidelines associated with each of the individual programs.

PHYSICS

*That effective **September 1, 2010,** a new course, Physics 2110A/B, Oscillations and Waves, be introduced by the Faculty of Science.*

Physics 2110A/B, Oscillations and Waves
A unified treatment of oscillatory and wave motion, with examples from mechanics, electromagnetism, optics and materials science. Topics include simple harmonic motion, forced oscillations and resonance, coupled oscillations, transverse waves on strings and in crystals, longitudinal waves in gases and solids, electromagnetic waves, Fourier methods, nonlinear oscillations and chaos.
Prerequisites: A minimum mark of 60% in Physics 1302A/B or 1402A/B or 1502A/B, or a minimum average of 80% in Physics 1028A/B and 1029A/B, or a minimum mark of 60% in the former Physics 1020 or 1024 or 1026; a minimum mark of 60% in each of (Calculus 1000A/B or 1100A/B) and (Calculus 1301A/B or 1501A/B), or in Applied Mathematics 1413.
Pre- or co-requisites: Mathematics 1600A/B, or the former Linear Algebra 1600A/B.
3 lecture hours, 2 laboratory/tutorial hours, 0.5 course.

*That effective **September 1, 2010,** a new course, Physics 2910F/G, Introduction to Physical Measurement, be introduced by the Faculty of Science.*

Physics 2910F/G, Introduction to Physical Measurement
Students will gain an introduction to experimental techniques through experiments on electricity and magnetism, and modern physics. Concurrent lectures will cover circuit theory and experimental design.
Antirequisite(s): The former Physics 2900E.
Prerequisite(s): A minimum mark of 60% in Physics 1302A/B or 1402A/B or 1502A/B, or a minimum average of 80% in Physics 1028A/B and 1029A/B, or a minimum mark of 60% in the former Physics 1020 or 1024 or 1026; a minimum mark of 60% in each of (Calculus 1000A/B or 1100A/B) and (Calculus 1301A/B or 1501A/B), or in Applied Mathematics 1413.
3 lecture hours, 3 laboratory hours, 0.5 course.

*That effective **September 1, 2010,** Physics 2900E, Intermediate Physics Laboratory, be withdrawn by the Faculty of Science.*

*That effective **September 1, 2010,** a new course, Physics 2810A/B, Physical Properties of Materials, be introduced by the Faculty of Science.*

Physics 2810A/B, Physical Properties of Materials
The properties of materials are described in terms of their atomic structure and interatomic bonding. The basic physical principles underlying mechanical, electrical, and magnetic properties are discussed in the context of modern materials including polymers and semiconductors.
Antirequisite(s): Materials Science 2810A/B, the former Physics 2800 and the former Materials Science 2800.
Prerequisite(s): (Calculus 1000A/B or 1100A/B), and (Calculus 1301A/B or 1501A/B), or Applied Mathematics 1413; Chemistry 1100A/B and 1200B, or the former Chemistry 023, 1020, 1050; Physics 1020, 1024, 1026, or (Physics 1028A/B and 1029A/B).
3 lecture hours, 0.5 course.

*That effective **September 1, 2010,** a new course, Materials Science 2810A/B, Physical Properties of Materials, be introduced by the Faculty of Science.*

Materials Science 2810A/B, Physical Properties of Materials
The properties of materials are described in terms of their atomic structure and interatomic bonding. The basic physical principles underlying mechanical, electrical, and magnetic properties are discussed in the context of modern materials including polymers and semiconductors.
Antirequisite(s): Physics 2810A/B, the former Physics 2800 and the former Materials Science 2800.
Prerequisite(s): (Calculus 1000A/B or 1100A/B), and (Calculus 1301A/B or 1501A/B), or Applied Mathematics 1413; Chemistry 1100A/B and 1200B, or the former Chemistry 023, 1020, 1050; Physics 1020, 1024, 1026, or (Physics 1028A/B and 1029A/B).
3 lecture hours, 0.5 course.

*That effective **September 1, 2010,** Physics 2800, Introduction to Materials Science, be withdrawn by the Faculty of Science.*

Physics 2800, Introduction to Materials Science
The structure and properties of materials are described in terms of their crystal structures and interatomic bonding. The basic physical principles underlying mechanical, thermal, electrical, magnetic, and optical properties are discussed in the context of modern materials including polymers and semiconductors.
Antirequisite(s): Materials Science 2800.
Prerequisite(s): (Calculus 1000A/B or 1100A/B), and (Calculus 1301A/B or 1501A/B), or Applied Mathematics 1413; Chemistry 1050, or the former Chemistry 1020, 023; Physics 1020, 1024, 1026, or (Physics 1028A/B and 1029A/B).
3 lecture hours, 1.0 course.

*That effective **September 1, 2010,** Materials Science 2800, Introduction to Materials Science, be withdrawn by the Faculty of Science.*

*That effective **September 1, 2010,** the Honors Specialization in Physics module be changed as shown below.*

HONORS SPECIALIZATION IN PHYSICS
Admission Requirements
Completion of first-year requirements with no failures. Students must have an average of at least 70% in 3.0 principal courses, with no mark in these principal courses below 60%:
Physics (1301A/B or 1401A/B or 1501A/B) and (1302A/B or 1402A/B or 1502A/B), or Physics 1028A/B and 1029A/B with a minimum 80% average, or the former Physics 1020 or 1024 or 1026;(Calculus 1000A/B or 1100A/B) and (Calculus 1501A/B (or Calculus 1301A/B with a mark of at least 85%)), or Applied Mathematics 1413;
1.0 additional course.
Students must complete Mathematics 1600A/B (or the former Linear Algebra 1600A/B) with a minimum mark of 55% by the end of term one in year 2.

Module
9.0 courses:
1.0 course: Calculus 2502A/B, 2503A/B.
0.5 course: Applied Mathematics 2402A or the former Differential Equations 2402A.
1.0 course from: Physics 2101A/B and 2102A/B, or Physics 2128A/B and 2129A/B, or Medical Biophysics 2128A/B and 2129A/B.*
4.5 courses: Physics 2110A/B and 2910F/G (or the former Physics 2900E), 3151A/B, 3200A/B, 3300A/B, 3400A/B, 4251A/B, 4999E.
1.0 course from: Astronomy 2201A/B, 2801A/B, Physics 2600A/B, 2700A/B, 2810A/B, the former Physics 2800, the former Materials Science 2800.
1.0 course from: Applied Mathematics 2813B, Physics 3900F/G/Z, 3926F/G.
Students must also complete Physics 2950Y, 3950Y, 4950Y (non-credit seminar courses).
*Note: Students can progress to Physics 2128A/B, 2129A/B or Medical Biophysics 2128A/B, 2129A/B only if they have taken Physics 1028A/B and 1029A/B.

*That effective **September 1, 2010,** the Honors Specialization in Physics module be changed as shown below.*

HONORS SPECIALIZATION IN ASTROPHYSICS
Admission Requirements
Completion of first-year requirements with no failures. Students must have an average of at least 70% in 3.0 principal courses, with no mark in these principal courses below 60%:Physics (1028A/B or 1301A/B or 1401A/B or 1501A/B) and (1029A/B or 1302A/B or 1402A/B or 1502A/B), or the former Physics 1020 or 1024 or 1026;
(Calculus 1000A/B or 1100A/B) and (Calculus 1501A/B (or Calculus 1301A/B with a mark of at least 85%)), or Applied Mathematics 1413;
1.0 additional course.
Students must complete Mathematics 1600A/B (or the former Linear Algebra 1600A/B) with a minimum mark of 55% by the end of term one in year 2.
Module
9.0 courses:
2.5 courses: Astronomy 2201A/B, 2801A/B, 3302A/B, 4101A/B, 4602A/B.
1.0 course: Calculus 2302A/B or 2502A/B, 2303A/B or 2503A/B.
0.5 course: Applied Mathematics 2402A or the former Differential Equations 2402A.
4.0 courses: Physics 2101A/B, 2102A/B, 2110A/B and 2910F/G (or the former Physics 2900E), 3151A/B, 3200A/B, 3300A/B, 3400A/B.
1.0 course from: Applied Mathematics 2813B, Physics 3900F/G/Z, 3926F/G.Students must also complete Physics 2950Y, 3950Y and 4950Y (non-credit seminar courses).

*That effective **September 1, 2010,** the Honors Specialization in Medical Physics module be changed as shown below.*

HONORS SPECIALIZATION IN MEDICAL PHYSICS
Admission Requirements
Completion of first-year requirements with no failures. Students must have an average of at least 70% in 3.0 principal courses, with no mark in these principal courses below 60%:

Physics (1301A/B or 1401A/B or 1501A/B) and (1302A/B or 1402A/B or 1502A/B), or Physics 1028A/B and 1029A/B with a minimum 80% average, or the former Physics 1020 or 1024 or 1026; (Calculus 1000A/B or 1100A/B) and (Calculus 1501A/B (preferred) or Calculus 1301A/B), or Applied Mathematics 1413;
1.0 additional course.
Students must complete Mathematics 1600A/B (or the former Linear Algebra 1600A/B) by the end of term one in year 2.
Module
9.0 courses:
1.0 course: Calculus 2502A/B (preferred) or Calculus 2302A/B, 2503A/B (preferred) or Calculus 2303A/B.
1.0 course from: Physics 2101A/B and 2102A/B, or Physics 2128A/B and 2129A/B, or Medical Biophysics 2128A/B and 2129A/B.*
4.5 courses: Physics 2110A/B and 2910F/G (or the former 2900E), 2600A/B, 3200A/B, 3300A/B, 3400A/B, 3926F/G, 4999E.
0.5 course from: Physics 4662A/B or 4672A/B.
2.0 courses from: Chemistry 2213A/B, 2223B; Medical Biophysics 4455A/B, 4467A/B; any 3000 or 4000 level Physics or Astronomy course; any Applied Mathematics course at the 2100 level or above.
Students must also complete Physics 2950Y, 3950Y, 4950Y (non-credit seminar courses).

Note: The above courses may have prerequisites that are not included in the module.
*Note: Students can progress to Physics 2128A/B, 2129A/B or Medical Biophysics 2128A/B, 2129A/B only if they have taken Physics 1028A/B and 1029A/B.

*That effective **September 1, 2010,** the Honors Specialization in Materials Science module be changed as shown below.*

HONORS SPECIALIZATION IN MATERIALS SCIENCE
Admission Requirements
Completion of first-year requirements with no failures. Students must have an average of at least 70% in 3.0 principal courses, with no mark in these principal courses below 60%:
Physics (1028A/B or 1301A/B or 1401A/B or 1501A/B) and (1029A/B or 1302A/B or 1402A/B or 1502A/B), or the former Physics 1020 or 1024 or 1026;Calculus 1000A/B or 1100A/B and Calculus 1301A/B or 1501A/B, or Applied Mathematics 1413; Chemistry 1100A/B and 1200B, or the former Chemistry 023, 1020, 1050.
Module
10.0 courses:
1.0 course: Physics 2810A/B or Materials Science 2810A/B and 0.5 course from Physics 2101A/B, 2102A/B, 2110A/B, 2910F/G; or the former Physics 2800 or the former Materials Science 2800.
1.0 course from: Calculus 2302A/B, 2303A/B, 2502A/B, 2503A/B.
2.5 courses: Chemistry 2213A/B, 2214A/B, 2271A, 2281G, 3364A/B.
1.5 courses: Earth Sciences 2206A/B, 3310A/B, 4424A/B.
2.0 courses: Physics 3380A/B, 3809A/B, 4810A/B, 4850A/B.
1.0 course: Materials Science 4999E.
1.0 course from: Applied Mathematics 2402A or the former Differential Equations 2402A, Applied Mathematics 3129A/B, 3815A/B, Chemical and Biochemical Engineering 4421A/B, Chemistry 2272F, 2283G, 2384B, 3320A/B, 3371F, 3372F/G, 3373F, 4481A/B, Earth Sciences 2230A/B, 3321A/B, the former Chemistry 2274A, Physics 2101A/B, 2102A/B, 2110A/B , 2910F/G, 3200A/B, 3400A/B, 3900F/G/Z, 3926F/G, 4251A/B, the former Physics 2900E.
Note: The above courses may have prerequisites that are not included in the module.
Note: It is recommended that students considering graduate studies discuss their course selection with a departmental counsellor.

*That effective **September 1, 2010,** the Major in Physics module be changed as shown below.*

MAJOR IN PHYSICS
Admission Requirements
Completion of first-year requirements, including the following courses each with a mark of at least 60%:
Physics (1301A/B or 1401A/B or 1501A/B) and (1302A/B or 1402A/B or 1502A/B), or Physics 1028A/B and 1029A/B with a minimum 80% average, or the former Physics 1020 or 1024 or 1026; (Calculus 1000A/B or 1100A/B) and (Calculus 1501A/B (preferred) or Calculus 1301A/B), or Applied Mathematics 1413.

Students must complete Mathematics 1600A/B (or the former Linear Algebra 1600A/B) with a minimum mark of 55% by the end of term one in year 2.
Module
6.0 courses:
1.0 course: Calculus 2502A/B (preferred) or Calculus 2302A/B, 2503A/B (preferred) or Calculus 2303A/B.
0.5 course: Applied Mathematics 2402A or the former Differential Equations 2402A.
1.0 course from: Physics 2101A/B and 2102A/B, or Physics 2128A/B and 2129A/B, or Medical Biophysics 2128A/B and 2129A/B*.
1.5 courses: Physics 2110A/B and 2910F/G (or the former 2900E), 3200A/B.
1.0 course from: Astronomy 2201A/B, 2801A/B, Physics 2600A/B, 2700A/B, 2810A/B, the former Physics 2800, the former Materials Science 2800.
1.0 course from: Applied Mathematics 2813B, Physics 3900F/G/Z, 3926F/G.Students must also complete Physics 2950Y, 3950Y (non-credit seminar courses).
Note: The above courses may have prerequisites not included in the module. A minimum mark of 85% is required in Calculus 1301A/B to take Calculus 2502A/B.
*Note: Students can progress to Physics 2128A/B, 2129A/B or Medical Biophysics 2128A/B, 2129A/B only if they have taken Physics 1028A/B and 1029A/B.

*That effective **September 1, 2010,** the Major in Astrophysics module be changed as shown below.*

MAJOR IN ASTROPHYSICS
Admission Requirements
Completion of first-year requirements, including the following courses each with a mark of at least 60%: Physics (1028A/B or 1301A/B or 1401A/B or 1501A/B) and (1029A/B or 1302A/B or 1402A/B or 1502A/B), or the former Physics 1020 or 1024 or 1026; (Calculus 1000A/B or 1100A/B) and (Calculus 1501A/B (preferred) or Calculus 1301A/B), or Applied Mathematics 1413.
Students must complete Mathematics 1600A/B (or the former Linear Algebra 1600A/B) with a minimum mark of 55% by the end of term one in year 2.
Module
6.0 courses:
1.5 courses: Astronomy 2201A/B, 2801A/B, 3302A/B.
1.0 course: Calculus 2502A/B (preferred) or Calculus 2302A/B, 2503A/B (preferred) or Calculus 2303A/B.
0.5 course: Applied Mathematics 2402A or the former Differential Equations 2402A.
2.0 courses: Physics 2101A/B, 2102A/B, 2110A/B and 2910F/G (or the former 2900E).
1.0 course from: Applied Mathematics 2813B, Physics 3900F/G/Z, 3926F/G.Students must also complete Physics 2950Y, 3950Y (non-credit seminar courses).
Note: A minimum mark of 85% is required in Calculus 1301A/B to take Calculus 2502A/B.

*That effective **September 1, 2010,** the Major in Medical Physics module be changed as shown below.*

MAJOR IN MEDICAL PHYSICS
Admission Requirements
Completion of first-year requirements, including the following courses each with a mark of at least 60%: Physics (1301A/B or 1401A/B or 1501A/B) and (1302A/B or 1402A/B or 1502A/B), or Physics 1028A/B and 1029A/B with a minimum 80% average, or the former Physics 1020 or 1024 or 1026; (Calculus 1000A/B or 1100A/B) and (Calculus 1301A/B or 1501A/B), or Applied Mathematics 1413.Students must complete Mathematics 1600A/B (or the former Linear Algebra 1600A/B) by the end of term one in year 2.
Module
6.0 courses:
1.0 course: Calculus 2502A/B (preferred) or Calculus 2302A/B, 2503A/B (preferred) or Calculus 2303A/B.
1.0 course from: Physics 2101A/B and 2102A/B, or Physics 2128A/B and 2129A/B, or Medical Biophysics 2128A/B and 2129A/B.
2.0 courses: Physics 2110A/B and 2910F/G (or the former 2900E), 2600A/B, 3926F/G.
1.0 course from: Physics 3151A/B, 3200A/B, 3300A/B, 3400A/B.
1.0 course: Any Physics or Astronomy course numbered 2100 or above; any Medical Biophysics course numbered 3000 or above.
Students must also complete Physics 2950Y, 3950Y (non-credit seminar courses).
*Note: Students can progress to Physics 2128A/B, 2129A/B or Medical Biophysics 2128A/B, 2129A/B only if they have taken Physics 1028A/B and 1029A/B.

*That effective **September 1, 2010,** the Major in Material Science module be changed as shown below.*

MAJOR IN MATERIALS SCIENCE
Admission Requirements
Completion of first-year requirements, including the following 3.0 courses each with a mark of at least 60%: Physics (1028A/B or 1301A/B or 1401A/B or 1501A/B) and (1029A/B or 1302A/B or 1402A/B or 1502A/B) or the former Physics 1020 or 1024 or 1026;Calculus 1000A/B or 1100A/B and Calculus 1301A/B or 1501A/B, or Applied
Mathematics 1413;Chemistry 1100A/B and 1200B, or the former 020, 023, 1050.

Module
6.0 courses:
1.0 course: Physics 2810A/B or Materials Science 2810A/B and 0.5 course from Physics 2101A/B, 2102A/B, 2110A/B, 2910F/G; or the former Physics 2800 or the former Materials Science 2800.
1.0 courses: Physics 3380A/B, 4850A/B.
2.0 courses: Chemistry 2213A/B, 2214A/B, 2271A, 3364A/B.
1.0 courses: Earth Sciences 2206A/B, 3310A/B.
1.0 courses from: Applied Mathematics 3129A/B, 3815A/B, Calculus 2302A/B, 2303A/B, 2502A/B, 2503A/B, Chemistry 2272F, 2281G, 2283G, 2384B, 3320A/B, 3371F, 3372F/G, 3373F, the former Chemistry 2274A , Earth
Sciences 2230A/B, 3321A/B, Physics 2101A/B, 2102A/B, 2110A/B, 2910F/G, 3200A/B, 3400A/B, 3809A/B, 3900F/G/Z, 3926F/G, the former Physics 2900E.
Note: The above courses may have prerequisites that are not included in the module.

*That effective **September 1, 2010,** the Specialization in Physics module be changed as shown below.*

SPECIALIZATION IN PHYSICS
Admission Requirements
Completion of first-year requirements, including the following 3.0 courses, each with a minimum mark of 60%:Physics (1301A/B or 1401A/B or 1501A/B) and (1302A/B or 1402A/B or 1502A/B), or Physics 1028A/B and 1029A/b with a minimum 80% average, or the former Physics 1020 or 1024 or 1026;
(Calculus 1000A/B or 1100A/B) and (Calculus 1301A/B or 1501A/B), or Applied Mathematics 1413;
1.0 additional course.
Students must complete Mathematics 1600A/B (or the former Linear Algebra 1600A/B) with a minimum mark of 55% by the end of term one in year 2.

Module
9.0 courses:
1.0 course: Calculus 2302A/B or 2502A/B, 2303A/B or 2503A/B.
0.5 course: Applied Mathematics 2402A or the former Differential Equations 2402A.
1.0 course from: Physics 2101A/B and 2102A/B, or Physics 2128A/B and 2129A/B, or Medical Biophysics 2128A/B and 2129A/B.*
3.5 courses: Physics 2110A/B and 2910F/G (or the former 2900E), 3151A/B, 3200A/B, 3300A/B, 3400A/B, 4251A/B.
2.0 courses from: Any courses not yet taken numbered 2100 or higher in Physics and Astronomy.
1.0 course from: Applied Mathematics 2813B, Physics 3900F/G/Z, 3926F/G.Students must also complete Physics 2950Y, 3950Y, 4950Y (non-credit seminar courses).
*Note: Students can progress to Physics 2128A/B, 2129A/B or Medical Biophysics 2128A/B, 2129A/B only if they have taken Physics 1028A/B and 1029A/B.

*That effective **September 1, 2010,** the Specialization in Astrophysics module be changed as shown below.*

SPECIALIZATION IN ASTROPHYSICS
Admission Requirements
Completion of first-year requirements, including the following 3.0 courses, each with a minimum mark of 60%: Physics (1028A/B or 1301A/B or 1401A/B or 1501A/B) and (1029A/B or 1302A/B or 1402A/B or 1502A/B), or the former Physics 1020 or 1024 or 1026;
(Calculus 1000A/B or 1100A/B) and (Calculus 1301A/B or 1501A/B), or Applied Mathematics 1413;
1.0 additional course.

Students must complete Mathematics 1600A/B (or the former Linear Algebra 1600A/B) with a minimum mark of 55% by the end of term one in year 2.

Module
9.0 courses:
2.5 courses: Astronomy 2201A/B, 2801A/B, 3302A/B, 4101A/B, 4602A/B.
1.0 course from: Calculus 2302A/B or 2502A/B, 2303A/B or 2503A/B.
0.5 course: Applied Mathematics 2402A or the former Differential Equations 2402A.
4.0 courses: Physics 2101A/B, 2102A/B, 2110A/B and 2910F/G (or the former 2900E), 3151A/B, 3200A/B, 3300A/B, 3400A/B.
1.0 course from: Applied Mathematics 2813B, Physics 3900F/G/Z, 3926F/G.Students must also complete Physics 2950Y, 3950Y, 4950Y (non-credit seminar courses).

*That effective **September 1, 2010**, the Specialization in Medical Physics module be changed as shown below.*

SPECIALIZATION IN MEDICAL PHYSICS
Admission Requirements
Completion of first-year requirements, including the following 3.0 courses, each with a minimum mark of 60%: Physics (1301A/B or 1401A/B or 1501A/B) and (1302A/B or 1402A/B or 1502A/B), or Physics 1028A/B and 1029A/b with a minimum 80% average, or the former Physics 1020 or 1024 or 1026; (Calculus 1000A/B or 1100A/B) and (Calculus 1301A/B or 1501A/B), or Applied Mathematics 1413;
1.0 additional course.
Students must complete Mathematics 1600A/B (or the former Linear Algebra 1600A/B) by the end of term one in year 2.

Module
9.0 courses:
1.0 course: Calculus 2302A/B or 2502A/B, 2303A/B or 2503A/B.
1.0 course from: Physics 2101A/B and 2102A/B, or Physics 2128A/B and 2129A/B, or Medical Biophysics 2128A/B and 2129A/B.*
3.5 courses: Physics 2110A/B and 2910F/G (or the former 2900E), 2600A/B, 3200A/B, 3300A/B, 3400A/B, 3926F/G.
0.5 course from: Physics 4662A/B, 4672A/B.
3.0 courses from: Chemistry 2213A/B, 2223B, Medical Biophysics 4455A/B, 4467A/B, any 3000 or 4000 level Physics or Astronomy course, any Applied Mathematics course at the 2100 level or above.
Students must also complete Physics 2950Y, 3950Y, 4950Y (non-credit seminar courses).
Note: The above courses may have prerequisites that are not included in the module.
*Note: Students can progress to Physics 2128A/B, 2129A/B or Medical Biophysics 2128A/B, 2129A/B only if they have taken Physics 1028A/B and 1029A/B.

*That effective **September 1, 2010,** the Specialization in Materials Science module be changed as shown below.*

SPECIALIZATION IN MATERIALS SCIENCE
Admission Requirements
Completion of first-year requirements, including the following 3.0 courses each with a mark of at least 60%: Physics (1028A/B or 1301A/B or 1401A/B or 1501A/B) and (1029A/B or 1302A/B or 1402A/B or 1502A/B), or the former Physics 1020 or 1024 or 1026;Calculus 1000A/B or 1100A/B and Calculus 1301A/B or 1501A/B, or Applied
Mathematics 1413; Chemistry 1100A/B and 1200B, or the former Chemistry 020, 023, 1050.

Module
9.0 courses:
1.0 course: Physics 2810A/B or Materials Science 2810A/B and 0.5 course from Physics 2101A/B, 2102A/B, 2110A/B, 2910F/G; or the former Physics 2800 or the former Materials Science 2800.
1.0 course from: Calculus 2302A/B, 2303A/B, 2502A/B, 2503A/B.
2.5 courses: Chemistry 2213A/B, 2214A/B or 2284B, 2271A, 2281G, 3364A/B.
1.5 courses: Earth Sciences 2206A/B, 3310A/B, 4424A/B.
2.0 courses: Physics 3380A/B, 3809A/B, 4810A/B, 4850A/B.

1.0 course from: Applied Mathematics 2402A or the former Differential Equations 2402A, Applied Mathematics 3129A/B, 3815A/B, Chemical and Biochemical Engineering 4421A/B, Chemistry 2272F, 2283G, 2384B, 3320A/B,
3371F, 3372F/G, 3373F, 4481A/B, the former Chemistry 2274A Earth Sciences 2230A/B, 3321A/B, Physics 2101A/B, 2102A/B, 2110A/B, 2910F/G, 3200A/B, 3400A/B, 3900F/G/Z, 3926F/G, 4251A/B, the former 2900E.
Note: The above courses may have prerequisites that are not included in the module.

*That effective **September 1, 2010,** the Specialization in Planetary Science module be changed as shown below.*

SPECIALIZATION IN PLANETARY SCIENCE
Admission Requirements
Completion of first-year requirements, including the following courses, each with a minimum mark of 60%: Physics (1028A/B or 1301A/B or 1401A/B or 1501A/B) and (1029A/B or 1302A/B or 1402A/B or 1502A/B), or the former Physics 1020 or 1024 or 1026;(Calculus 1000A/B or 1100A/B) and (Calculus 1301A/B or Calculus 1501A/B), or Applied Mathematics 1413.

Module
10.0 courses:
0.5 course: Astronomy 2201A/B.
0.5 course: Physics 2700A/B.
1.0 course: Earth Sciences 2200A/B, 2206A/B.
1.5 courses: Planetary Science 3380A/B, 4490E.
6.5 additional courses from: Astronomy 2801A/B, Physics 2101A/B, 2102A/B, 2110A/B, 2128A/B, 2129A/B, 2810A/B, 2910F/G, 3151A/B, 3200A/B, 3300A/B, 3400A/B, 3926F/G, the former Physics 2900E, Earth Sciences
2123A/B (if Earth Sciences 1023A/B has not been taken), any Earth Sciences course in the range 2200-2299 not already taken, Earth Sciences 3310A/B, 3313A/B, 3314A/B, 3315A/B, 3321A/B, 3369A/B, 4400A/B, 4421A/B,
4424A/B, 4431A/B, Planetary Science 4830A/B.
Note: The above courses may have prerequisites that are not included in the module

*That effective **September 1, 2010,** Minor in Physics module be changed as shown below.*

MINOR IN PHYSICS
Admission Requirements
Completion of first-year requirements, including the following courses each with a mark of at least 60%: Physics (1301A/B or 1401A/B or 1501A/B) and (1302A/B or 1402A/B or 1502A/B), or Physics 1028A/B and 1029A/b with a minimum 80% average, or the former Physics 1020 or 1024 or 1026; (Calculus 1000A/B or 1100A/B) and (Calculus 1301A/B or 1501A/B), or Applied Mathematics 1413.Students must complete Mathematics 1600A/B (or the former Linear Algebra 1600A/B) by the end of term one in year two.

Module
4.0 courses:
1.0 course from: Calculus 2302A/B, Calculus 2303A/B, Calculus 2502A/B, Calculus 2503A/B.
1.0 course from: Physics 2101A/B and 2102A/B, or Physics 2128A/B and 2129A/B, or Medical Biophysics 2128A/B and 2129A/B.*
1.0 course: Physics 2110A/B and 2910F/G, or the former Physics 2900E.
1.0 course from: Astronomy 2201A/B, 2801A/B, Physics 2600A/B, 2700A/B, 2810A/B, the former Physics 2800, the former Materials Science 2800.
Students must also complete Physics 2950Y (non-credit seminar course).
*Note: Students can progress to Physics 2128A/B, 2129A/B or Medical Biophysics 2128A/B, 2129A/B only if they have taken Physics 1028A/B and 1029A/B.

*That effective **September 1, 2010**, the Minor in Material Science module be changed as shown below.*

MINOR IN MATERIALS SCIENCE
Admission Requirements
Completion of first-year requirements, including the following 3.0 courses each with a mark of at least 60%:

Physics (1028A/B or 1301A/B or 1401A/B or 1501A/B) and (1029A/B or 1302A/B or 1402A/B or 1502A/B), or the former Physics 1020 or 1024 or 1026; Calculus 1000A/B or 1100A/B and Calculus 1301A/B or 1501A/B, or Applied Mathematics 1413;Chemistry 1100A/B and 1200B, or the former Chemistry 1050.

Module
4.0 courses:
1.0 course: Physics 2810A/B or Materials Science 2810A/B and 0.5 course from Physics 2101A/B, 2102A/B, 2110A/B, 2910F/G; or the former Physics 2800 or the former Materials Science 2800.
1.0 course: Chemistry 2211A/B or 2271A, 2213A/B.
1.0 course: Earth Sciences 2206A/B, 3310A/B.
1.0 course from: Applied Mathematics 2402A or the former Differential Equations 2402A, Calculus 2302A/B, 2303A/B, 2502A/B, 2503A/B, Chemistry 2214A/B, 2272F, 2281G, 2283G, 2384B, 3320A/B, the former Chemistry 2274A, Earth Sciences 2230A/B, 3321A/B, Physics 2101A/B, 2102A/B, 2110A/B, 2910F/G, 3200A/B, 3380A/B, 3400A/B, 3809A/B, 3900F/G/Z, 3926F/G, 4810A/B, the former Physics 2900E.
Note: The above courses may have prerequisites not included in this module.

*That effective **September 1, 2010,** the Minor in the Physics of Materials module be changed as shown below.*

MINOR IN THE PHYSICS OF MATERIALS
Admission Requirements
Chemistry 1100A/B and 1200B or Chemistry 1024A/B, or the former Chemistry 023, 1020, 1050. Available to those students who will complete an Honors Specialization in Physics or Specialization in Physics, or by permission of the Department.

Module
4.0 courses:
1.0 course: Physics 2810A/B or Materials Science 2810A/B, and 0.5 course from any Physics course numbered 2100 or higher or any Applied Mathematics course numbered 3000 or higher; or the former Physics 2800 or the former Materials Science 2800.
1.0 course from: Chemistry 2213A/B or 2273A, and Chemistry 2214A/B or 384B (or the former 2274A).
2.0 courses: Physics 3380A/B, 3809A/B, 4810A/B, 4850A/B.
If any of these courses have already been taken as part of an Honors Specialization or Specialization in Physics, alternative courses must be selected from those listed in that module.
Note: This module, together with an Honors Specialization or Specialization in Physics provides a solid preparation for graduate studies in Condensed Matter or Materials Physics.

FACULTY OF SOCIAL SCIENCE

HISTORY

*That effective **September 1, 2010,** History 2140 be introduced and cross-listed with Women's Studies 2140.*

History 2140: Women in Canadian History: Changing Roles and Diverse Social Realities
A survey of Canadian women's history from first European contact to the 1960s, with a focus on the realities of women's lived experience as recorded through biography.
Antirequisite(s): History 2182A/B; Women's Studies 2139 A/B; Women's Studies 2140.
3 lecture hours, 1.0 course

REGISTRAR'S UPDATE

Faculty of Music

CLC 2205F/G
Change To: CLC 2205F/G (In Popular Music Studies Major)

Change From: CLC 2250F/G

Richard Ivey School of Business

IVEY 4423A/B
Change To: Financial Strategies for Global Success
Change From: Financial Markets

Faculty of Science

BIOLOGY 2382B
Change To: 2 lecture hours, 1 lecture/tutorial hour
Change From: 5 Laboratory hours listed

CALCULUS 2502A/B
Change To: Pre-requisite: Mathematics 1600A/B or the former Linear Algebra 1600A/B
Change From: Pre-requisite: Linear Algebra 1600A/B

PHYSICS 3151A/B
Change To: Pre-requisite: Mathematics 1600A/B or the former Linear Algebra 1600A/B
Change From: Pre-requisite: Linear Algebra 1600A/B

PHYSICS 1026
Change To: Physics 1401A and Physics 1402B
Change From: Physics 1026

Faculty of Social Science

International Relations 2701E
Change To: 2 lecture hours, 1 tutorial hour
Change From: 3 lecture hours