SCIENCE COURSES FOR NON-SCIENCE MAJORS

- Not all courses listed below will necessarily be offered every academic year.
- All courses listed below are three lecture hours per week or equivalent, unless otherwise stated. In addition, laboratory/tutorial time may be scheduled as required.
- *Note:* Most Computer Science courses require substantial time out of class in writing, correcting, and testing computer programs. Students should be prepared to devote a minimum of three to five hours a week per course to assignment work alone.

1000 LEVEL COURSES:

BIOLOGY

- **BIOL-1013. Organisms and the Environment (Winter semester)**
  Organisms interacting with other organisms and with their physical environment. Ecological impacts of human activity. This course is offered on-campus and as a distance course. (Intended for non-majors and students requiring preparation for BIOL-1111 and BIOL-1101.)(Not counted for credit in any Faculty of Science program.) (2 lecture hours a week.)

COMPUTER SCIENCE: COURSES

- **COMP-1047. Computer Concepts for End-Users (Fall and Winter Semester)**
  Introduction to the concepts of operation of a computer system, including hardware and software. Development of conceptual understanding of word processors, databases, spreadsheets, etc., and practical experience with their use. Networking concepts and data communication concepts will be introduced. The Internet will be introduced with students having access to internet resources. Management information systems including the systems development lifecycle will be discussed. Fundamental concepts of algorithm development and programming will be introduced. Hands-on experience with microcomputers as well as a distributed-computing environment will be involved. In addition to lecture time, laboratory/tutorial time may be scheduled as required. (May not be used to fulfill the major requirements of any major or joint major in Computer Science.) (3 lecture hours)

ECONOMICS: COURSES

- **ECON-1100. Introduction to Economics I (Fall and Winter Semester)**
  An introduction to microeconomics intended to provide students with the tools necessary to begin to understand and evaluate how resources are allocated in a market economy. Specific topics include how markets function, theories of the business firm, of consumer behaviour and of income distribution. The economic roles of labour unions and government are also covered. The theories are applied to contemporary Canadian economic problems.

- **ECON-1110. Introduction to Economics II (Fall and Winter Semester)**
  This course is an introduction to macroeconomics. The emphasis is upon measuring and explaining what determines economic aggregates such as the total national product (GDP) and the level of prices and employment. The role of money and financial institutions, the impact of international trade and the policy options available to governments for coping with inflation and unemployment are discussed in detail.

ENVIRONMENTAL SCIENCE

- **ESCI-1000. Natural Hazards and Disasters (Fall and Winter Semester)**
  The Earth's component systems and their interrelationships. Earth hazards and the Earth's interior processes: volcanism and earthquakes. Hazards and surface processes: landslides and floods. Atmospheric hazards: storms, hurricanes and tornadoes. (May be taken by Science students for credit, but does not count as a Science option towards the fulfillment of the specified requirements for a Science degree). (2 lecture hours per week)

- **ESCI-1130. Atmosphere and Climate (Fall and Winter Semester)**
  An introduction to the atmosphere and the basic principles of meteorology and climatology. Topics include weather systems, atmospheric pollution and inadvertent climate modification, climate change and relationships between climate and living organisms. (3 lecture hours a week.)

FORENSIC SCIENCE: COURSES

- **FRSC-1107. Introductory Crime Scene Investigation (Fall and Winter Semester)**
  This course will introduce students to the theoretical background of scientific methods used in Forensic Sciences and their practical applications to crime scene investigation within the multidisciplinary Forensic fields. The focus of the course is exploration and examination of evidence found at crime scenes. The students learn the discovery, identification, collection, examination and processing of various types of Forensic evidence.

PHYSICS: COURSES

- **PHYS-1000.Introduction to Astronomy I (Fall Semester)**
  The solar system with emphasis on the results of recent space exploration. This is a descriptive course suitable for the non-scientist. (May be taken by B.Sc. students for credit, but does not count as a Physics course or other science course towards the fulfillment of the requirements for the B.Sc. degree.) (2 lecture hours a week.)

- **PHYS-1010.Introduction to Astronomy II (Winter Semester)**
  The stars, galaxies, including pulsars, black holes, and quasars. Current theories of the structure of the universe will be discussed. This is a descriptive course suitable for the non-scientist. (May be taken by B.Sc. students for credit, but does not count as a Physics course or other science course towards the fulfillment of the requirements for the B.Sc. degree.) (2 lecture hours a week.)

- **PHYS-1300.Introductory Physics for Life Sciences I (Fall Semester)**
  This is an algebra-based course intended for students interested in the biological or health sciences, or related disciplines. The topics covered include the basic mechanical concepts of force, work and energy, properties of matter, and heat, with examples and applications drawn from the modeling of biological systems. (Prerequisites: one 4 "U" or OAC mathematics course or equivalent.) (3 lecture hours a week, 2 laboratory hours and 1 tutorial hour every week) (Anti-requisites: PHYS-1305, PHYS-1400.) (Open to students in Human Kinetics, Forensic Science, Bachelor of Arts and Science, and all programs within in the Faculty of Science; exceptions only with the permission of the Head or designate.)

- **PHYS-1310. Introductory Physics for Life Sciences II (Winter Semester)**
  This course is a continuation of PHYS-1305 intended for students interested in the biological or health sciences, or related disciplines. The topics covered include wave motion, sound, electricity and magnetism, light, and an introduction to topics in modern physics involving the life sciences such as the quantum nature of radiation and its interaction with biomolecules, high energy radiation and radioactivity, and the statistical treatment of data. (Prerequisite:

PHYS-1300 or PHYS-1400.) (3 lecture hours per week, 1 tutorial hour and 2 laboratory hours every week.) (Antirequisites: PHYS-1410.) (Open to students in Human Kinetics, Forensic Science, Bachelor of Arts and Science, and all programs within in the Faculty of Science; exceptions only with the permission of the Head or designate.)

2000 LEVEL COURSES: ***(If student likes to continue elective in the same field/program from previous 1000 level course selection)***

COMPUTER SCIENCE: COURSES

- **COMP-2057. Introduction to the Internet**
  Students will be introduced to the Internet as a global information infrastructure, including fundamental concepts in protocols and services, packaging of data, and data transmission. Common tools and multimedia such as HTML, CSS, and CMS, used for the development of websites will also be introduced. Web page design, quality, accessibility and security issues will be discussed. How Web browsers and search engines work will be demonstrated. Social networks and other current Internet applications will be examined. In addition to lecture time, laboratory/ tutorial time may be scheduled as required. (Prerequisite: COMP-1047 or COMP-2067 or COMP-1400.) (May not be used to fulfill the major requirements of any major or joint major in Computer Science.) (3 lecture hours a week)

ENVIRONMENTAL SCIENCE

- **ESCI-2010. Geology and the Environment (Winter Semester)**
  Effect of geological factors on the environment; pollution of groundwater, ground subsidence, nuclear waste disposal, subsurface disposal of liquid wastes, earthquake prediction and control. This course is designed specifically for the non-scientist. (May not be taken for credit towards a B.Sc. Degree in Environmental Science.) (2 lecture hours a week or equivalent.)

- **ESCI-2020. Discovering Dinosaurs (Fall and Winter Semester)**
  The origin, evolution, behaviour, ecology, and extinction of dinosaurs, and how these aspects of dinosaur science are understood through the study of their fossils. How the public perception and scientific interpretation of dinosaurs have changed over time as a result of new discoveries. (3 lecture hours per week)

- **ESCI-2300. Introduction to Oceanography (Winter Semester)**
  Examination of the physical, chemical, geological and biological aspects of the oceans. Topics will include the interconnectedness of global climate, ocean currents, waves and tides, anthropogenic stressors, and their influence on marine biodiversity and ecosystems. (3 lecture hours a week.)