

SCIENCE AND MATH (SCMA)

SCMA*1000 Business Statistics Winter Only (LEC: 3) [0.50]

This course provides an introduction to business and economic statistics to be used by persons employed in the fields of management, accounting, marketing, business and public administration. It examines descriptive and inferential techniques used in quantitative business research. Topics covered include sampling, data organization, hypothesis testing and measures of association to provide the student with skills needed to perform basic analyses and to understand research literature.

Department(s): Business Administration

Location(s): Guelph-Humber Campus

SCMA*1040 The Science of Everyday Life Fall Only (LEC: 3) [0.50]

Students examine the basic sciences through presentations and demonstrations of every day items and issues. This includes familiar objects and areas of knowledge, such as automobiles, airplanes, computers, drugs, and the recently completed human genome project. The course also covers the representation of scientific issues in the mass media, and the ethical and political dimensions of forensic science, the environment, and food.

Department(s): Liberal Studies

Location(s): Guelph-Humber Campus

SCMA*1050 Astronomy: Discovering Our Place in the Universe Winter Only (LEC: 3) [0.50]

Using both historical and contemporary data, students examine the planets, the life cycle of stars, the nature of galaxies, and the origin and future of the cosmos. An understanding of the scientific process, from raw data to the formulation of physical laws, provides an underlying thread to the course. Students describe and explain the evolution of astronomical knowledge, and apply their understanding through direct observation.

Department(s): Liberal Studies

Location(s): Guelph-Humber Campus

SCMA*1120 Cell Biology Summer and Fall (LEC: 4, LAB: 2) [0.50]

This course provides the student with a basic understanding of cell biology. Topics include the chemistry of the cell, cell structure and function, membrane transport, cell cycle, gene structure and function, inheritance, gene expression, and nucleic acid replication.

Restriction(s): Registration in BASC.KIN program.

Department(s): Kinesiology

Location(s): Guelph-Humber Campus

SCMA*1290 The Wonders of Science Fall Only (LEC: 3) [0.50]

With topics ranging from the cosmos to the atom, this course seeks to enhance students' scientific literacy. It is designed to be interdisciplinary, drawing from fields such as biology, chemistry, ecology, physics, geology, and astronomy. This course recognizes the civic importance of a scientifically-informed society, a society able to think critically and speak responsibly about the use and misuse of science in public affairs, while also presenting an opportunity for students to learn about the universe and themselves.

Restriction(s): SCMA*1040

Department(s): Liberal Studies

Location(s): Guelph-Humber Campus

SCMA*1500 Introductory Mathematics for Kinesiology Summer and Fall (LEC: 3, LAB: 1) [0.50]

This course reviews mathematical operations and applications. Topics to be covered include algebra, elementary functions and their graphs, trigonometry, vectors, and introductory calculus. Emphasis will be placed on modeling and applications arising in physics and basic biomechanics.

Restriction(s): Registration in BASC.KIN program.

Department(s): Kinesiology

Location(s): Guelph-Humber Campus

SCMA*2020 Basic Concepts of Anatomy and Physiology Fall and Winter (LEC: 3, LAB: 2) [0.50]

This course introduces the student to the study of human anatomy and physiology. An integrated and systemic approach provides the student with the background concepts to understand anatomical and physiological development for children and adolescents.

Offering(s): Also offered through Distance Education format.

Restriction(s): Registration in the BASC.ECS program.

Department(s): Early Childhood Studies

Location(s): Guelph-Humber Campus

SCMA*2040 Research Methods for Social Science Summer and Fall (LEC: 3) [0.50]

This course is a general introduction to the contemporary research methods that are employed in the social sciences. Emphasis will be placed on understanding the process of social research and how it relates to theory development and problem investigation. Qualitative and quantitative techniques and applications will be discussed. Other topics will include: ethics and politics of social research, the nature of causation, conceptualization, operationalization, development of hypotheses, and sampling techniques. Research examples will be a key aspect of the lectures and seminars.

Offering(s): Also offered through Distance Education format.

Prerequisite(s): 3.00 credits

Restriction(s): Not available to students registered in BASC.PSYC program.

Department(s): Liberal Studies

Location(s): Guelph-Humber Campus

SCMA*2050 The Science of Healthy Living Summer, Fall, and Winter (LEC: 3) [0.50]

This course examines the scientific bases for practices that are consistent with improving, maintaining or enhancing healthy living. Evidence-based population health research is discussed as the mechanism for identifying factors that influence health in population or sub-population groups. The scientific method for developing hypotheses and theories is explored as it relates to recommendations for psychological wellness, healthy eating, active living and healthy weights. The evidence for lifestyle risk factors as contributors to the development of chronic disease is discussed. Assignments evaluate the scientific evidence for popular diets and alternative health care practices.

Offering(s): Offered through Distance Education format only.

Restriction(s): KIN*1010

Department(s): Liberal Studies

Location(s): Guelph-Humber Campus

SCMA*2060 Applied Decision Making Techniques Fall Only (LEC: 1, LAB: 2) [0.50]

This course focuses on the making of optimal decisions in business situations where numbers and data are available to evaluate alternative courses of action. This is a hybrid course in which the material is taught both online and in class. Quantitative concepts of decision making will be presented online prior to each class. In class, students will apply those concepts in a lab setting through a variety of exercises and assignments using statistical software. Students will be expected to complete a major project featuring an analysis of a business decision problem. Among the decision-making techniques covered will be probability theory, Bayes' rule, expected utility, forecasting, simulations, and linear programming.

Prerequisite(s): SCMA*1000

Restriction(s): SCMA*2000.

Department(s): Business Administration

Location(s): Guelph-Humber Campus

SCMA*2080 Mathematics and Biophysics Fall Only (LEC: 4) [0.50]

This course reviews mathematical operations and introduces concepts of physics that will be of value to students in the Kinesiology Program. In particular, topics of physics that enable the description of motion and the forces that affect motion will be considered.

Prerequisite(s): SCMA*1500

Restriction(s): Registration in BASC.KIN program.

Department(s): Kinesiology

Location(s): Guelph-Humber Campus

SCMA*2110 Research Methods for Kinesiology Winter and Summer (LEC: 3) [0.50]

This course is a general introduction to contemporary research methods that are employed in kinesiology and the health sciences. Emphasis will be placed on understanding research design and the scientific method, and how it relates to theory development. Quantitative and qualitative techniques and applications will be discussed. Other topics will include: ethics and politics of health research, the nature of causation and correlation, conceptualization, data characteristics, conventions, and organization, operationalization of variables, development of hypotheses, and sampling techniques. Research examples will be a key aspect of the lectures.

Prerequisite(s): 0.50 credits

Restriction(s): Registration in BASC.KIN program.

Department(s): Kinesiology

Location(s): Guelph-Humber Campus

SCMA*3010 Research Methods in Business Fall Only (LEC: 3) [0.50]

This course examines contemporary research methods employed in business. Emphasis is placed on understanding the process of business research and how it relates to theory development, problem investigation, and management questions. Qualitative and quantitative techniques and applications are discussed. Other topics include ethics and politics of research, the nature of causation, conceptualization, measurement, development of hypotheses, data description, statistical analysis, sampling techniques, and preparation of case studies. Research examples and case studies are key aspects of the lectures and seminars.

Prerequisite(s): 7.50 credits, SCMA*1000

Department(s): Business Administration

Location(s): Guelph-Humber Campus

SCMA*3040 Quantitative Methods for Social Science Summer and Fall (LEC: 3, LAB: 1) [0.50]

The course introduces descriptive and inferential techniques used in quantitative social research. Students will acquire the skills needed to perform statistical analyses and to read the research literature. A standard statistical computer package will be used to perform data analyses. Topics include: data organization, sample description, hypothesis testing and measures of association.

Offering(s): Also offered through Distance Education format.

Prerequisite(s): SCMA*2040

Department(s): Liberal Studies

Location(s): Guelph-Humber Campus

SCMA*3080 Statistics for Kinesiology Fall Only (LEC: 3, LAB: 1) [0.50]

This course addresses the basic principles of data analysis in the context of health research. Students will gain an understanding of the rationale, value and limitations of descriptive and inferential statistics. Students will gain direct experience in data analysis through laboratory activities while learning how to report findings in accordance with empirical standards. Topics to be covered include: data collection, displaying and summarizing data, analysis and interpretation of descriptive data examining relationships between variables, cause-and-effect analyses, and non-parametric data analysis.

Prerequisite(s): SCMA*1500, SCMA*2110

Restriction(s): Registration in BASC.KIN program.

Department(s): Kinesiology

Location(s): Guelph-Humber Campus

SCMA*3100 Biomechanics Winter Only (LEC: 3, LAB: 2) [0.50]

This course integrates material established in KIN*1040 and SCMA*2080 to facilitate the study and understanding of human movement.

Emphasis is on the mechanisms through which the components of the musculoskeletal system interact to create movement.

Prerequisite(s): KIN*1040, SCMA*2080

Restriction(s): Registration in BASC.KIN program.

Department(s): Kinesiology

Location(s): Guelph-Humber Campus