

# UBC Vancouver Summer Program

## *June 4 – July 5, 2016 Course Package Offerings*

<http://vancouversummerprogram.ubc.ca>

Enhance your students' learning experiences with study in an international setting in Vancouver, BC Canada! We welcome each university to organize a group of students to study course packages in the beautiful campus of the University of British Columbia.

Many course packages have a minimum and maximum class size, so we encourage you to register your students early. Course packages that do not have the minimum number of students will not be offered, but students may transfer to other packages.

For further information, please visit our website or contact us at:

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## Applied Science

### Civil Engineering

#### ***Civil Engineering Materials***

The structure and properties of common Civil Engineering materials: Portland cement concrete, asphalt concrete, timber and steel. The emphasis is on the relationship between the structure of these materials and their mechanical properties and durability. Will include field visits to construction sites and presentations from industry personnel.

#### ***Project Based Learning in Civil Engineering Materials***

Some topical problems will be identified in the performance of civil engineering materials such as Portland cement concrete, asphalt concrete, timber and steel, and students in groups will carry out laboratory and field experiments to study the materials involved. This is a laboratory based course where site-visits and external consultations are an integral requirement.

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## Architecture and Landscape Architecture

### Landscape Architecture

#### ***Vancouver's Public Realm – Sustaining Livability***

The city of Vancouver is known to be a livable and sustainable city, which aims to be the world's Greenest City by 2020. An important and significant aspect of the city's livability is the intentionally developed public realm- parks, greenways, waterfronts, streets and squares. The public realm provides places for people to gather, socialize and recreate, encourages active transportation, maintains spaces for the urban forest and vegetation to thrive and contributes other environmental services to the city. In this course students will learn how a well-planned and designed public realm supports livable neighbourhoods and provides important social and environmental services to the city. Students will learn how to document and assess public spaces in the city and will visit and study the City's best examples of sustainable neighbourhoods including Yaletown, Southeast False Creek, Lower Lonsdale and East Fraserlands.

#### ***Landscapes and Parks of Greater Vancouver***

Vancouver is a beautiful and sustainable city in a dramatic natural setting. What role do the natural areas in and around the city play in sustaining a metropolitan area such as Vancouver? This course will introduce how urban natural areas clean air and water, sustain wildlife, and provide psychological and other health benefits to people. Students will learn about the most important environmental services and human benefits provided by the large parks and natural areas in the Vancouver region; and will hike or bike on guided field trips to some of the most important sites including Stanley Park, Lighthouse Park, Pacific Spirit Regional Park, Camosun Bog, Surrey Bend Regional Park, Lynn Canyon Regional Park.

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## Arts

### Global Journalism, Culture and Communications: Practice and Principles

This package examines the ways in which media shape, and are shaped by, society and technology. Students will learn about the social and cultural context of communications, become familiar with current debates in media and be introduced to journalistic principles and practices. The package brings together the Department of Anthropology and the award-winning UBC Graduate School of Journalism.

#### ***Culture and Communication (Anthropology)***

This course will examine the relationship between language and culture by covering key debates in the field including animal vs. human communication, language change and language standardization. Students will explore how language is involved in cultural constructions of race, gender, class and ethnicity. They will also analyze how language is understood in relation to power, political economy and language ideologies.



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## ***Global Journalism (Journalism)***

This course will examine the development of media technologies, their applications, and their cultural, political and social impacts. Students will also gain hands-on experience in learning how to think and operate like a professional journalist in a simulated multimedia environment. It is designed to introduce students to the grammar and syntax of media across platforms, based on a core journalistic skill set of interviewing, reporting, news writing, and research methods in tandem with the most current technical tools.

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## **Business**

### **Package A – International Business and International Marketing**

#### ***International Business Management***

Development of general environmental framework for international business studies by drawing on international and development economics, research into government-business relations and studies in comparative socio-cultural systems and political systems. This course is taught from the perspective of a senior manager. It analyzes the decisions made by firms in an international context. To do so it combines material from strategy, international finance, marketing, human resource management, positive trade theory, institutional trade policy, and other areas. It will emphasize the use of analytical tools and the development of oral and written communication skills. By design, the course is integrative, implying that there is some overlap with material taught in international marketing and finance courses.

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#### ***International Marketing***

An analysis of the scope and significance of contemporary international business operations with particular reference to the marketing management problems encountered by firms with multinational branches and subsidiaries. Through lecture material and practical assignments, students will explore a broad range of international marketing issues and concepts. With a focus on strategic problem solving, you will learn the use primary and secondary research tools in objectively evaluating international market potential and risk. The marketing process is examined in detail, including strategic market planning, product, pricing and promotional decision-making, and marketing management. The course is taught with a hands-on approach and providing you with abundant time to employ knowledge learned to advance your term project.

### **Package B – Introduction to Marketing and Organizational Behaviour**

#### ***Introduction to Marketing***

This course is designed to provide a broad introduction to the field of marketing and basic considerations affecting the domestic and international marketing of goods and services. Marketing is far more than just selling or advertising within a business setting; it is a major part of everyday life. This course will illustrate the importance of marketing and will help you develop fundamental marketing knowledge and skills applicable to all specializations within business.



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## ***Organizational Behaviour and Management***

The primary objective of this course is to teach you about the effects of organizational structures and interpersonal processes on the behaviour of individuals in organizations and the wider implications for the effectiveness and success of organizations. This course will expose you to frameworks, approaches and behaviours that can help in effectively participating, leading and managing in organizations. Research has shown that effective people management is an important contributor to organizational success. The emphasis will be on creating effective leaders and team members through a better understanding of motivation, working in teams, power and influence, leadership and navigating organizational culture and change. All this will help participants contribute to the success of themselves and their organizations.

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## **Education**

### **Package A – Educational Psychology and Special Education**

#### ***Classroom Management***

The course is designed to empower educators to develop a positive classroom climate and an effective learning environment in which teachers and their students engage in meaningful and successful learning experiences together. To achieve this goal, students will be introduced to current, evidence-based practices in school-wide, classroom and individual behaviour support. Classes will include lecture, discussion and small group activities that provide opportunities to develop skills in the application of these practices. Specific objectives of the course include developing student knowledge and skill in: (a) a proactive, preventive approach to classroom management; (b) school-wide positive behaviour support; (c) the design of a positive classroom environment; (d) the development of positive, nurturing relationships with students; (e) the use of positive reinforcement to strengthen prosocial behaviour; and (f) effective ways to respond to problem behaviour.

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#### ***Assessment and Positive Behaviour Support in School and Community Settings***

The course introduces students to the philosophy and methods of behavioural assessment and positive behaviour support with persons who engage in challenging behaviour in school and community contexts. Specific objectives of the course include developing student knowledge and/or skill in: (a) basic principles of behaviour change; (b) the features and values of positive behaviour support; (c) ecological assessment of environments and functional assessment of persons with challenging behaviour; (d) the completion of summary hypothesis statements and competing behaviour pathway diagrams; (e) the design of multi-component behaviour support plans that are logically-linked to assessment results; and (f) the design of plans that are both technically sound and contextually-appropriate.



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## Package B – Language Learning and Teaching in the World

### ***Language Practices in Multilingual Contexts***

Successful language learners and teachers need to understand more than just the structure and nature of the language(s) they teach and learn. This introductory course provides a broad overview of diverse language practices across multilingual contexts and explores how this diversity impacts language learning and teaching. Students will have an opportunity to reflect on their own language choices in different contexts and develop critical thinking and collaborative work skills through class discussions and assignments. Topics to be discussed include: language variation according to age, ethnicity, class, race and gender; language attitudes and ideologies; global Englishes; language use and globalization. By the end of the course students will be able to analyze functions of language in society and apply the course content to their own language learning and teaching.

### ***Strategic Language Use in a Globalized World***

Developing communicative competence applicable across sociocultural contexts is an important prerequisite for teaching in an increasingly globalized world. This course will provide students with an understanding of the diverse strategies of language use in and beyond the classroom. The aims of this course are to help students strategically adapt their language practices in cross-cultural settings and to be able to analyze the language use of others. Topics of this course broadly introduce diverse approaches to conceptualizing and analyzing language in use. By the end of the course students will: be familiar with key sociolinguistic concepts; develop effective strategies for enhancing their language use; be able to apply course content to their own language use.

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## Forestry

### Urban Forestry

#### ***An Introduction to Urban Forestry***

This course will provide a general introduction to the concept of Urban Forestry and why this is an important topic in today's rapidly urbanizing society. There is a growing need to adapt to multiple impacts of climate change; and increasing demand from the public for the recreational, psychological and health benefits that green-space networks provide. With increased urban populations, global warming, urban heat islands, flooding and pollution, cities may become unlivable or demand massive energy-use for cooling, unless we can establish large scale, healthy urban forest systems.

#### ***Green-Space Management in North America***

Urban forestry is about planning and managing urban green-spaces and ecosystems for human welfare, ecological health, and protection of our cities' support systems. Urban forest networks, parks, wetlands, and other green infrastructures are vital in moderating heat waves and cooling demands, maintaining biodiversity and carbon sinks, controlling forest fires, storm-water flood mitigation, bio-energy production, etc. Urban Forests improve and protect our health, property values, local jobs and businesses, outdoor recreation opportunities, and community character. This course will give the



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students an introduction to the importance of understanding urban forestry in the face of today's rapid urbanization as forests and green systems compete for space among buildings, roads/transit, storage facilities, and energy infrastructure.

Classes are interactive and students will be able to experience the concepts learned in class through fieldtrips and class activities. Past participants have been taken on fieldtrips to various locations around the Greater Vancouver area including Surrey, North Vancouver and Stanley Park. There was also a tour of the UBC Botanical Gardens as well as other guided walks through the UBC campus designed to demonstrate the many facets of urban forestry.

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### **Kinesiology**

#### **Coaching Science**

##### ***Principles of Coaching***

This course provides the basis of what it takes to be a successful coach. It will enable students to define who they are as coaches and will enhance their training and development skills, including strength and conditioning; nutrition; motor learning development; and performance planning. Upon completion of the course the student will be able to recognize the power inherent in coaching, to create a 'coaching philosophy', to recognize common sport injuries, and will learn the basic prophylactic and supportive taping systems.

##### ***Sport Psychology for Coaching***

The course provides a broad overview of major topics in Sport Psychology for Coaching. The student will develop an awareness of how sport and exercise psychology knowledge can be applied in Coaching and understand the importance of the many mental aspects of coaching including response to injury, athlete motivation, leadership, transition issues and mental skill training.

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### **Medicine**

#### **Package A: Clinical Research and Clinical Medicine**

##### ***Introduction to Clinical Research in the Sciences***

***(Pediatrics)***

This course provides a window into how clinical research is conducted in the medical sciences. Research methodologies, research process, ethical considerations and practical tips for conducting high-yield, evidence-driven research with patients will all be presented and discussed. The course includes lectures, workshops and a hands-on mentored individual research project by students that will be presented at the end of the course. A wide variety of health care providers and medical educators will participate in the course and provide examples of research conducted at UBC and other academic institutions. Engaging speakers, visits to clinical research facilities and effective mentorship techniques will provide students with a once-in-a-lifetime opportunity to take part in the most advanced learning in basic clinical research.



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## ***Introduction to Clinical Research at the Bedside***

***(Pediatrics)***

This course will bring medical and science students close to the real life of medicine in the 21st century. Students will be able to meet up close with practicing clinicians who manage complex patients every day as part of their work in the hospital and clinic setting. Using advanced teaching tools such as medical simulation, and together with experienced physicians from multiple disciplines of medicine, students will learn how to approach patients with medical history taking, physical examination, development of a medical differential diagnosis, and will gain knowledge in determining the need for investigations in order to reach a diagnosis and a develop a treatment plan. A combination of lectures, simulation labs, case-based workshops and visits to laboratory and clinical areas, will enhance the hands-on experience and understanding of the medical and other sciences.

## **Package B: Pharmacology and Critical Analysis in Medicine and Science**

### ***Pharmacology through Case Studies***

***(Anesthesiology, Pharmacology & Therapeutics)***

An integrated approach to learning pharmacology through the use of simulated clinical cases specifically designed to highlight the fundamental principles. Knowledge acquisition will be supported through complementary lectures and small group exercises. Through this educational model, students will explore the basic science and clinical applications of cardiovascular, respiratory, gastrointestinal, reproductive and endocrine pharmacology, and their integration with other core areas of study within the curriculum.

### ***Primary Literature Analysis in Science and Medicine*** ***(Anesthesiology, Pharmacology & Therapeutics)***

This course will empower students from both clinical and basic science programs with an understanding of the scientific method, providing the foundation needed to adequately review and assess primary literature in any biomedical discipline. Through small group exercises, discussions and critical analysis of published literature, students will develop valuable skills in recognizing how confounding factors such as bias, inadequate study design and poor statistical analysis may (intentionally or not) impact the underlying science. The resulting downstream consequences of poor experimental design and interpretation of results in informing (or formulating) evidence-based medicine will also be explored.

## **Package C: Occupational Science and Occupational Therapy**

### ***Health Care and Living with Long-term Conditions*** ***(Occupational Science & Occupational Therapy)***

The World Health Organization has identified a critical need for comprehensive health and social programs to address the “global burden” of chronic illness and long-term disability. This course will provide an exploration of long-term conditions and how these affect activity and participation in everyday life. Drawing on individuals “lived experiences” across the life span and continuum of care, a case-based curriculum will include topics related to: infants in neonatal intensive care; pre-school children with attention deficit and/or autism spectrum disorders; teens coping with anxiety disorders; adults with multiple sclerosis, arthritis, spinal cord injury, and/or bipolar disorder; and seniors following a stroke, fractures, and/or transitioning from hospital into the community. Experiential sessions will enhance understanding of disability, the experience of living with chronic conditions, and the need for community integration in the context of the unique Canadian health care system. Learning approaches



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used include short talks and demonstrations from clinical experts and researchers, video cases, tutorials, and debates.

### ***Strategies for Cognitive, Psychosocial and Rehabilitation Management of Long-term Conditions*** (Occupational Science & Occupational Therapy)

This course advances knowledge from the first course and will provide an overview of cognitive and psycho-educational assessment and treatment strategies for the evidence-based management of long-term conditions in everyday life. Examples of topics covered include: assessing pain and caring for premature infants, understanding abnormal fatigue and the strategies to management it, training in the use of manual and power wheelchairs and mobility technology, ergonomic principles and adaptations, cognitive occupation-based program to address mild impairment, use of technology in overcoming daily challenges and support healthy living. The sessions in this course will use case examples and exercises, social media, and workshop format to tap into creativity to effectively apply the principles presented.

### **Package D: Biochemistry and Molecular Biology in Human Health, Disease, and the Environment**

#### ***Molecular Mechanisms of Disease*** (Biochemistry and Molecular Biology)

This course will provide an introduction to the molecular basis of disease and the concepts behind novel molecular therapies. Students will gain an understanding of fundamental human biochemical pathways and learn how molecular perturbations in these pathways via genetics, environmental insults and pathogens can lead to disease. Several case-based topics will be presented featuring work from world-renowned UBC faculty. The course will be taught through a combination of lectures, student presentations and small group problem-based learning all led by UBC experts. Course content will vary but may include topics such as the role of gut microbiota in health, cancer, diabetes and cardiovascular disease. Several novel molecular therapeutic strategies will be discussed and may include genetically engineered gene/cell based therapies, stem cell cures, siRNA based expression control, and nanoparticle delivery systems. This course is intended for students in medical programs or life science related fields.

#### ***Environmental Biochemistry*** (Biochemistry and Molecular Biology)

Environmental Biochemistry will critically examine biochemical and chemical processes in the world at large and the impact on human health. The course will provide students with the scientific principles and concepts required to understand key interrelationships of the natural world and tackle the most daunting challenges of the 21st century. We will explore and debate key processes in a case-based approach. Topics discussed may include life & water (quantity and quality), pH and ocean acidification, UV-B radiation, sustainable vs. unsustainable energy flows, cycles of carbon & nitrogen, chemicals in the environment (e.g. glyphosate, neonicotinoids, heavy metals, crude oil, SO<sub>2</sub>, pesticides, dioxins and PCBs, environmental estrogens), food security (synthetic fertilizers, genetically modified organisms, pesticides, herbicides), smog & others. Students will incorporate current issues into their work featuring small group discussions, learn to evaluate the relative risks of many present-day problems and gain the tools to further explore these topics.

Pre-requisites: Students are expected to have a strong background in biology and chemistry at a level equivalent to typical 1st year North American undergraduate courses. Students lacking a basic



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biochemistry background can expect a higher workload compared to students with previous biochemistry knowledge.

**Note: Courses in Packages E through to G will have the format of lecture or seminar-based teaching, followed by presentation and discussion of specific clinical cases.**

### Package E: Origins of Illness and Psychotherapies

#### ***A Life Cycle Approach to Mental Illness***

***(Psychiatry)***

Mental illness causes significant morbidity world-wide; many serious disorders have their origins before adult life and many distinctive childhood onset disorders persist into adult life. This course will provide an evidence-based description of the causes and mechanisms underlying the major psychiatric disorders of childhood. The roles of brain and cognitive development and maturation will also be applied to understanding psychiatric disorders in adults and in old age. Prof. Anthony Bailey, Dr. S. Evelyn Stewart and other faculty members will be the lecturers for this course.

#### ***Introduction to Psychotherapy***

***(Psychiatry)***

This course will provide an introduction to the foundations of psychotherapy. Topics will include assessment of readiness for therapy, and a description of psychotherapy models and modalities including cognitive-behavioural, mindfulness-based, and supportive psychotherapies. Prof. John Ogrodniczuk, Head, Division of Psychotherapy in the Department of Psychiatry, and other faculty members will be the lecturers for this course.

### Package F: Major Mental Illness and Pharmacology

#### ***Mood Disorders and Psychosis: Assessment and Diagnosis***

***(Psychiatry)***

Disorders of mood such as major depression and bipolar disorder, and of impaired reality testing (psychosis) such as schizophrenia and schizoaffective disorder will be the topic of this course. These illnesses cause significant, and growing disability in all countries. Detection and assessment of mood disorders and psychosis, and accurate differential diagnosis will be the focus of this course. The epidemiology and mechanisms of illness will also be covered. Prof. Raymond Lam, Dr. Fidel Vila-Rodriguez and other faculty members will be the lecturers for this course.

#### ***Introductory Neuropsychopharmacology***

***(Psychiatry)***

This course will cover drugs used in the treatment of the major psychiatric disorders. Over the duration of the course, we will briefly review the symptoms and neurobiology of psychiatric disorders, and then explain in detail how drug therapies work to improve mental health. The pharmacology of these drugs will be studied at both the molecular level and from a clinical perspective. Practical approaches to the pharmacological treatment of the major mental illnesses including schizophrenia, mood disorders (depression and bipolar disorder), and substance abuse disorders will be incorporated. Prof. Ric Procyshyn from the Department of Psychiatry will be a lecturer along with Dr. Alasdair Barr from the Department of Anesthesia, Pharmacology and Therapeutics.

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## Package G: Neuroscience and Clinical Neuropsychiatry

### ***Translational Neuroscience***

***(Psychiatry)***

This course will cover the molecular and cellular aspects of neuroscience important to understand the origins, clinical features, and treatment of major brain disorders. This course offers the necessary foundation to pursue related fields of study such as neurology, pathology, pharmacology, and psychiatry. Prof. Weihong Song, Head, Division of Neuroscience in the Department of Psychiatry, will be the central lecturer for this course.

### ***Introductory Neuropsychiatry***

***(Psychiatry)***

This course will cover the anatomical and physiological basis of major mental disorders, focusing upon organic mental illnesses. A neuropsychiatric perspective will include the key features in the history, physical examination, and mental status examination related to the diagnosis of mental disorders in general and organic mental disorders in particular. Prof. Trevor Hurwitz, a psychiatrist and neurologist, from the Department of Psychiatry will be the central lecturer.

## Package H: Introduction to Population and Public Health

What is Population and Public Health?

Population and public health focus on the health of populations and communities, asking questions like ‘why are some people healthy and others not?’ and developing preventative approaches to improve health. These are important topics for those interested in careers in medicine or health sciences. UBC is recognized as a world leader in this area. Through presentations, problem-based learning, group assignments, class discussions and field trips, students will expand their understanding of health and consider how to apply these ideas in their home countries and elsewhere.

### ***Social Determinants of Health***

***(Population and Public Health)***

The first course addresses the question of understanding what affects population and public health. It is generally accepted that a variety of factors (e.g. social, economic and physical environments, personal health practices, individual capacity and coping skills, human biology, early childhood development, culture, gender and health services) influence health. What are the most important influences? By what mechanisms is health damaged or promoted? How are these factors influenced by public policy? This course focuses on the meaning of health and its measurement, and examines what influences the health, well-being and quality of life of individuals, families, communities and nations.

### ***Introduction to Population and Public Health Practice***

***(Population and Public Health)***

This course addresses the question of how we can respond to population and public health concerns. It introduces the student to key perspectives and frameworks that are used to inform activities that can improve the health of individuals, families, communities and nations. Potential approaches to preventing disease and improving health, such as a focus on the prevention of disease, screening for disease, the implementation of monitoring and surveillance systems, and the treatment of disease will be covered. Key frameworks such as types of prevention (i.e. primary, secondary, tertiary), and evaluation of the cost and effectiveness of activities will also be considered.

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### Science

#### Package A – The Dynamic Earth and its Beautiful Treasures

This package is designed to examine the origin and formation of our planet, from its early beginnings and dynamic plate movements, to the formation of, and exploration for, precious metals and gems. Students will discover how active our planet really is through learning about the rock cycle and its connections to plate tectonic movements and linkages to the formation of economic mineral deposits. No background knowledge of geology is required for this package.

##### ***Our Dynamic Planet***

This course considers how an active and evolving Earth system has created the planet we know today, one that supports diverse life and is rich in natural resources. Using international and Canadian examples, we will examine the origin of our planet and its composition and structure. From mountains to glaciers, earthquakes to volcanoes, ancient rocks and mighty dinosaurs, Canada is a wonderful natural laboratory that we will use to investigate our active and dynamic planet.

##### ***Earth Treasures***

Canada is also known for its spectacular precious metals and gems, some of them housed in our departmental museum, The Pacific Museum of the Earth. This course investigates the formation, exploration, mining and aspects of marketing of gemstones and precious metals. We touch on topics such as fundamental scientific concepts, natural and synthetic gems and explore the world of fine jewelry. The origin, valuation and exploration strategies for gems such as diamonds and precious metals such as gold and platinum will be investigated here and placed into a fascinating international and Canadian geological context.

Our emphasis is on active learning teaching methods where students are inspired to explore the subject matter through field trips, labs, discussions and in class activities.

#### Package B – The Geometry of Nature

##### ***The Size of Things***

This multi-disciplinary course on scaling will use the unifying theme of size to examine a wide range of physical and biological systems. In each case we will see that "size matters". This will be shown true in the most basic sense, that of spatial size, shape, area and volume. In a more general sense this truism holds in that the geometry, kinematics, and dynamics of phenomena are largely determined by the relative size of underlying factors and processes. We will identify a set of general scaling laws that reflect these facts, and learn a set of conceptual, graphical, and mathematical tools for working with them. Both the laws and the tools transcend traditional disciplinary boundaries within science and beyond science.

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## ***Symmetry***

This course examines elements of symmetry through an interdisciplinary perspective. In geometry, symmetry is the property by which the sides of a figure or object reflect each other across a line or surface. In biology, symmetry is the orderly repetition of parts of an animal or plant. Symmetry is important to chemistry because it explains observations in spectroscopy, quantum chemistry and crystallography. In physics symmetry is a concept of balance illustrated by such fundamental laws as the third of Newton's laws of motion. These many important aspects of symmetry will be explored.

First year university science and math are recommended for these courses.

