

UBC Vancouver Summer Program

June 3 – July 3, 2018

Course Package Offerings

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 meet the minimum number of students will not be offered, but students may transfer to other packages.

For inquiries from Asia:
Ms. Winty Cheung
Executive Director
UBC Asia Pacific Regional Office
winty.cheung@apro.ubc.ca
852.2111.4401

South Asia and the Middle East:
Mr. Stephen Kumar
Executive Associate
UBC India Liaison Office
stephen.kumar@ubc.ca
91.11.4606.1905

For all other inquiries:
Ms. Marg Toronchuk
Program Coordinator
University of British Columbia
marg.toronchuk@ubc.ca
1.604.822.0158

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Applied Science - Civil Engineering

Package A - Structural Materials

Structural Materials

Structure & properties of construction materials: Concrete, Asphalt, Steel, & wood, with emphasis on relationship between structures, mechanical properties, & durability. Course includes field visits.

Laboratory Testing of Structural Materials

Students in groups carry out laboratory & field experiments to study the materials involved. It is a laboratory based course where site-visits and external consultations are an integral requirement.

Package B - Advanced Concrete Structures

Advanced topics in Concrete Technology

Introduction to Specialized Concretes such as Fiber Reinforced and High Performance Concrete, Shotcrete etc., Mineral & Chemical Admixtures, Mechanical Response of Advanced Concretes & Durability.

Experimental Studies of Structural Concrete Elements

Students in groups carry out experimental work on structural concrete elements: beams, girders, & columns with different reinforcements or repairs. It includes testing, analysis, & computer modeling.

Applied Science - Electrical and Computer Engineering

Package A - Introduction to Electrical and Computer Engineering

Introduction to Digital Technology and Smart Devices

Nowadays, new products (smart-home devices, portable electronics, cars, appliances) are getting more intelligent and more connected. Do you ever wonder what technology lies behind them? This course covers the fundamental ideas behind smart devices and modern electronics. We will study the building blocks of digital electronics systems, like small micro-computers, and how they interface with us. Our exploration will involve the design and implementation of machines that can read signals from the real world and make decisions digitally. This course will introduce the basics of microcontroller programming to perform smart tasks; additionally, it will cover the different peripherals and sensors used to communicate, and how the information they collect is stored. Regardless of your background, if you are interested in the world of modern electronics, this course is for you!

Introduction to Electric Circuits, Sensors, and Power

You need more than a digital system and basic programming to make your electronics work- you have to understand electricity, sensors, and what it takes to bring everything to life. In this course, the basics of electricity and electrical circuits will be covered. You will learn about circuit fundamentals, amplifiers, and filters, which allow us to recover signals from devices such as microphones. Our look into sensors will allow us to detect physical magnitudes (like light, sound, pressure, color, temperature, and speed) and turn them into electrical signals that our microcontroller can understand. Finally, we will explore the circuits that give power to our electronics and bring them to life. Along with an introduction to digital electronics, this course will allow you to build simple systems to develop and interface with electronics systems.

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Package B - Renewable Energy and Power Conversion Package

Introduction to Renewable Energy

Do you want to save the planet with green power? This course covers the fundamentals of renewable energy systems and includes topics on energy storage, power generation, distribution, transportation, and consumption. We will start with an introduction to carbon emissions, climate change, and environmental pollution to emphasize the importance of sustainability. Students will learn about solar, wind and ocean power generation. Grid connection and microgrids will be explained, as well as battery storage and fuel cell systems. Modern loads such as LED lights and electric vehicles will be discussed around the concept of demand side management. Students will gain skills on these emerging and key areas of green power and will have the opportunity to consider several case studies/examples. The course includes some tutorials and demonstrations using simulation software and physical equipment. What could be more important? The global energy markets will be dominated by renewables in the future - the planet will depend on engineers with a strong background in green power.

Electricity and Conversion for Renewable Power

How do we make renewable power generation happen? Renewable energy sources such as wind, solar, and ocean are intermittent and fluctuating. Changes in sun irradiance during the day, in wind speed variation, and changing ocean tidal velocity produce fluctuations in power generation. This course covers the fundamental of electricity and power conversion to transform variable/fluctuating energy into high quality power required to supply loads. The principles of power conversion for AC and DC system will be covered. Application examples will include topics such as power converters for battery chargers, solar inverters, wind/ocean power conversion, and traction for electric vehicles. The course will provide a strong theoretical background and enable students to understand renewable power conversion at the system level. A practical/applied component will be included, providing the student with real-world problem solving scenarios, laboratory experiences and visits to UBC state of the art power facilities.

Prerequisites: Course equivalent to UBC MATH 101

Architecture and Landscape Architecture

Thinking by Design

Design Thinking Through Making

The built environment is full of design problems. From products to cities, these problems don't have correct answers, but rather a range of possible solutions. To tackle these design problems, we need to explore different ways of thinking. In this hands-on course, you will learn to approach open-ended problems through the lens of a designer and explore the built environment through hands-on design projects. You will tackle each project in stages, from initial concept to final result, with interim reviews along the way. You will learn to communicate your ideas both verbally and to critically analyze the work of your classmates. Drawing from examples in architecture, landscape architecture, urban design, and product design, you will cultivate abstract thinking skills and increase your visual literacy.

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Design Thinking Through Drawing

Drawing is an essential part of design thinking and communication. From sketches, to plans, to detailed diagrams, visual representation is a fundamental skill. While digital methods are increasingly common, the culture of putting pencil to paper is still at the heart of these techniques. This hands-on course introduces you to the drawing techniques used in architecture, landscape architecture, and urban design. Through lectures, field trips and in studio sessions, you will learn methods of visually communicating concepts and intent. With a focus on analog, the skills developed in this course will offer a strong base for further studies in design and design media.

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Arts

Package A - International Finance, Trade and Politics

This package combines the Vancouver School of Economics (VSE), a global centre for research and hands-on learning about pressing economic issues, ranked in the top 20 worldwide and number one in Canada, and UBC's highly regarded Political Science Department.

International Trade and Financial Markets (Economics)

The modern global economy is intricately tied together through networks of trade and financial interconnections. This course will give students an understanding of the structure and function of international trade and international financial markets. The course will give a basic introduction to the forces driving international trade in goods and financial assets among nations of the world. The major theories of international trade and financial markets will be reviewed. Topics covered will include the determinants of a country's trading pattern, recent trends in international trade such as offshoring and global supply chains, the role of financial markets in international development, the future of the Renminbi as an international currency, the understanding of international financial crises, and sovereign debt crises.

Dynamics of Democracy and Global Uprisings (Political Science)

This course deals with some of the key concepts of political science, matching them with developments around the globe. We begin by considering some of the concepts and controversies in defining democratic and non-democratic systems. How do we tell democratic systems from non-democratic ones? Are all democracies the same, or at least similar? Is citizen satisfaction a distinctive quality of those regimes? We then link these discussions to the rising waves of global discontent around the globe. The seemingly-universal quality of these uprisings give a strong indication that the struggles we are witnessing are no longer over democracy versus other systems; instead, what seems to be at issue are the meanings and practices largely associated with democratic regimes, the expectations of people, and what regimes provide. Finally, we focus on specific uprisings, chosen by the students, in an attempt to contextualize our discussions and make sense of recent global developments in an informed, thoughtful manner.

Note: This course package is also available in the July session as Arts Package D.

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Package B - 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)

Anthropology is the study of human societies and cultures and their development. A very important area of interest is human language. This course will examine the relationship between language and culture by covering key debates in the field including animal vs. human communication, cross-cultural differences, language policies and language change. 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. Students will gain experience in meeting writing standards for UBC Arts/Anthropology courses and will receive individual feedback on writing assignments.

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.

Business

Package A - International Business Management 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.

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Package B – Introduction to Marketing and Management 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.

Management and Organizational Behaviour

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.

Community and Regional Planning

Innovations for Livable Cities

Innovations in Community Economic Development

Social entrepreneurs around the world creatively organize institutions to reconnect the community spirit with economic development. Under the banner of social economy, solidarity economy, sufficiency economy, social enterprise, Community Economic Development (CED) aims to create wealth humanely, fairly, and sustainably. In this course, students will analyze international experience with co-ops, land trusts, and co-management arrangements. We will also visit Vancouver-area Community Economic Development projects such as community gardens, retail-strip business-improvement areas, and credit unions. Lessons for policy-makers, activists, and entrepreneurs will be drawn.

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Innovative Housing Solutions

Rising populations, intense competition for scarce resources and a broadening gap between the rich and poor places housing at the centre of considerations of social and spatial justice. As an emerging urbanist, what is your role in addressing or perpetuating these trends? Using Vancouver as an urban lab - you will explore and come to understand gentrification, displacement and the precarious nature of housing. Through this course you will:

- Investigate new strategies for meeting housing needs;
- Explore the situation in Vancouver through visits to key organizations, and
- Investigate the global politics of housing.

We will compare Vancouver's problems and solutions with those of other major cities, and consider how the Vancouver example might add to housing theory. This course will include classroom theory and lectures, site visits, and considerable student analysis and discussion in the field.

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Education

Package A - Language in Canada and Beyond

Canada is a country rich in languages. There are over 60 Indigenous languages, and the two languages of the original colonial settlers - English and French. And then there are the hundreds of languages brought to Canada by immigrants from around the world. The result is a multilingual, multicultural country that provides a perfect location for the study of English as a living, changing language. The courses in this package are designed to help students improve their own written and spoken English while they investigate the ways in which language works in different settings and across cultural spaces.

Language practices in Canada: A multilingual land

Successful language learners need to understand more than just the structure and nature of the language(s) they learn. Through in-class interactive sessions and field trips, this introductory course provides a broad and coherent overview of diverse language practices across multilingual contexts (such as Canada) 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 variation in sports, entertainment, work, and the arts; language attitudes and ideologies. By the end of the course, students will be able to analyze functions of language in society and achieve a deeper understanding of how key course themes and concepts operate in language teaching and learning in multilingual contexts.

Language across borders and boundaries

Being able to communicate in multiple contexts and cultures is an important prerequisite for living and working 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 course will help students to adapt their own language practices to a wide variety of social and cross-cultural settings and to analyze the language use of others. Diverse approaches to conceptualizing and analyzing language in use will be introduced. By the end of the course students will be familiar with key sociolinguistic concepts, will have developed effective strategies for enhancing their language use in multiple settings, and be able to apply course content to helping others with their language use. This course is suitable for both students and teachers of English.

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Package B - Early Childhood Education and Development

Our early childhood courses focus on creating exceptional educational programs for children from infancy to eight years of age. The courses are carefully designed to introduce international students to research and theory pertaining to the education of young children. International students will be provided with opportunities to learn how theory is connected to practice by engaging in field study activities such as observing in early childhood classrooms and studying educational materials and resources that are used in Canadian and Western early childhood classrooms.

Designing High Quality Programs in Early Childhood Settings

This course addresses the notion that children are natural learners. Students will learn about, discuss, and clarify important concepts and theories relative to early childhood education, including child development theory and the holistic nature of learning in the early years. The course highlights the idea that young children's innate capacity to learn and teachers' responses to children's inquiries provide the foundation for the development of high-quality early learning experiences for young children and impacts the type of programming that is created. Students will learn about designing appropriate daily routines and implementing teaching strategies for integrating different areas of learning, such as literacy, math, science, and art through inquiry and project-based learning. The course will also include observations in local Early Childhood settings.

Creating Environments to Support Learning in Early Childhood Settings

This course introduces students to the significant role that designing stimulating and nurturing early childhood classroom environments plays in children's learning and in supporting all aspects of their development and growth. Students will learn about creating dynamic indoor and outdoor learning spaces for young children and the importance of providing children with original and natural educational materials and resources. The course will include visits to local state-of-the-art Early Childhood environments for young children.

Forestry

Urban Forestry

Both courses in the Urban Forestry package will be interactive and supplemented by a number of field trips and class activities. Past participants have been taken on field trips to various locations around the Greater Vancouver area including Surrey, North Vancouver and Stanley Park. There is 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.

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.

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Urban Green Spaces and Well-being

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 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.

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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.

Introduction to Clinical Medicine 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 - Health Care and Living with Long-term Conditions in the Community

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, children with a variety of diagnosis, teens and adults coping with mental health diagnosis, and populations living with mobility impairments. Experiential sessions will include field trips, incorporating elements of universal

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Medicine Package B - continued

design, working with a variety of devices and adaptations, and trialing ambulation aides. This unique course 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 will include short talks and demonstrations from clinical experts and researchers, experiential sessions, video cases, and tutorials.

Strategies for addressing Psychosocial and Environmental Factors of Long-Term Conditions (Occupational Science & Occupational Therapy)

This course advances knowledge from the first course and will provide an introduction to various rehabilitation assessment methods and intervention strategies for the evidence-based management of long-term chronic conditions in everyday life. Examples of topics covered include using evidence in practice, assessing and managing living with pain, assessment and training in the advance use of manual and power wheelchairs and mobility technology, use of virtual reality in rehabilitation, managing living with invisible disability, and hi-tech and lo-tech strategies for visual impairment in overcoming daily challenges and support healthy living. The sessions in this course will use case examples and exercises, social media, workshop format and field trips to tap into creativity to effectively apply the principles presented.

Science – Institute for Resources, Environment and Sustainability

Climate Change & Energy Futures: Where Innovation Meets Hope

The Grand Challenge of Climate Change: Causes, Consequences and Adaptation

Climate change resulting from the use of fossil fuels in the global energy systems is perhaps the single greatest collective challenge facing society in the 21st century. This course will explain the science behind human induced climate change, and examine possible consequences and impacts across the world. We will study how experts make predictions of future climate change and its impacts, and how societies will need to re-organize their economies and institutions to adapt to new climate realities. This course will include field trips and presentations by industry guest speakers, as well as speakers from non-governmental organizations and the public sector.

Energy Innovation and Climate Solutions

Large-scale innovation in energy systems will be necessary for reducing greenhouse gas emissions and avoiding dangerous climate change. Technological and business innovations have begun to transform the global energy system. From the development of renewables such as solar and wind, to the deployment of complex networked technologies (such as Electric Vehicles), or the diffusion of novel 'mundane' technologies (such as improved cook stoves in the developing world), technological innovation holds the key to our energy future. This course will examine what is driving these innovations, how might their promise be reached and their benefits be maximized, and what social and policy efforts are needed to sustain them. This course will include field trips and presentations by industry guest speakers, as well as speakers from non-governmental organizations and the public sector.

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