

Sustainability Focused Course List

Faculty	Department	Course Name	Course Number	Course Description	Sustainability Focused	Environmental	Economic	Social
Arts	African Studies	Field Study in Africa	400	A field course for the in situ interdisciplinary study of a country or region of Africa, emphasizing the geographical, archaeological, historical, cultural, political, economic and artistic aspects. For further information students should contact the Academic Programs Office or the Program Coordinator.	x	x	x	x
Arts	Development Studies	Environment and Development	405	Students will critically engage with sustainability through study of the intersections between environment and development, such as planning and development, management, and implementation, the political economy of environment, and political ecology. Topics may include political and economic systems, resource depletion, industrial agriculture, biodiversity, gender, hazards, traditional knowledge, and resistance.	x	x	x	x
Arts	Economics	Agricultural Economics	367	Introduction to the major economic forces affecting the agri-food sector, including technological change, price variability, environmental sustainability and international competition. Issues include government support mechanisms, international trade restrictions, industrialization of agriculture, economics of food safety and security, sustainable resource use and environmental conflict.	x	x	x	x
Arts	Geography	Critical Approaches to Development: Theory and Applications	425	A critical approach to meanings of economic and social development and the theories of development from a spatial perspective. Other areas of study include: population and health dynamics, gender and development, rural development, industrialization, formal and informal economies, foreign aid, trade and debt, community development. Case studies from Latin America, Asia and Africa.	x	x	x	x
Arts	Geography	Environmental Sustainability and Management: Issues and Applications	521	Advanced topics in environmental sustainability and management, and critical analysis of approaches to resolving sustainability issues in environmental management. Students are usually involved directly in a major case study/field research project.	x	x	x	x
Arts	Geography	Animal Geography	317	Explores the socio-spatial relationships between humans and animals, with the goal of elucidating the ecological, economic, political, social, and cultural pressures shaping these relations, and the conflicts arising from human-animal interactions.	x	x		x
Arts	Geography	Environmental Geography	321	Environmental and resource issues, with emphasis on topics such as sustainability, ethics; planning; policy and decision making; and management strategies. Case examples highlight issues in resource sectors such as freshwater, oceans, parks and wildlife, tourism and recreation, forests and energy.	x	x	x	x
Education	Educational Research	Change and Innovation	613	This course has been designed to increase both your knowledge and understanding of educational change and innovation. It will give you the opportunity to learn more about the change process, the effect of change on various individuals in the educational community, and change leadership. All institutions, whether in the K-12 or the post-secondary education systems, have experienced and participated in change in many aspects of their work and in their lives. This course will expand your knowledge as you both experience and lead change in educational settings - the 'what's' and the 'how's' of Change and Innovation. (Topic 5 - Measuring, monitoring and sustaining change)	x		x	x
Environmental Design	Environmental Design	Interdisciplinary Seminar	501	Seminar	x			
Environmental Design	Environmental Design	Interdisciplinary Seminar	601	Seminar	x			
Environmental Design	Environmental Design	Sustainability in the Built Environment	523	working toward a respect for natural systems and a higher quality of life. Examination of the built environment and the tools to achieve a stable and balanced and a regenerative ecosystem in a process of responsible consumption, wherein waste is minimized and the built environment interacts with natural environments and cycles. Healthful interior environments, resource efficiency, ecologically benign materials, renewable energies and social justice issues are examined.	x	x	x	x
Environmental Design	Environmental Design	Impact Assessment and Risk Management	624	EIA is the process of identifying, predicting, evaluating and mitigating the effects of development proposals prior to major decision-making. Biophysical, economic and social impact assessment will be reviewed in an integrated, interdisciplinary approach which will include lectures, studies of methodologies, theory and practical problems, and discourse with practitioners. Federal and various Provincial impact assessment policies and procedures will be critically addressed.	x	x	x	x

Environmental Design	Environmental Design	Landscape Planning and Ecological Design	626	Project oriented course focusing on interdisciplinary methods, process and theoretical foundations of ecological design and its applications in the built environment and urban and regional landscapes. Principles of landscape ecology, systems theory, technology design and transfer ecosystem science, landscape process form and function, environmental gradients, habitat, trophic organization and nutrient flows will be used in design of interventions for problem solving in built environment and urban-regional contexts including: sustainable urban form, ecological infrastructure and ecosystem services, urban environmental management and water management in urbanizing watersheds.	x	x	x	x
Environmental Design	Environmental Design Architecture	Sustainable Buildings for Cold Climates	683.02		x			
Environmental Design	Environmental Design Architecture	Solar Heating in High Performance Buildings	697.54		x			
Environmental Design	Environmental Design Planning	Community Planning	637	Overall objective is to introduce students to land use planning and development issues in the suburban context. Addresses one of the most important urban challenges related to smart growth management. Provides a step-by-step introduction to community planning processes and essential planning policies to create development that is economically feasible, socially inclusive and environmentally friendly.	x	x	x	x
Business	Business and Environment	Rediscovering Leadership: The Haskayne Wilderness Retreat	749	One-week intensive wilderness retreat combines experiential outdoor activities and personal growth challenges with cross-cultural first nations teachings and ceremonies to deliver core leadership skills for social responsibility and sustainable development.	x		x	x
Business	Business and Environment	Strategies for Sustainable Development	751	The strategic context for making business decisions with respect to sustainable development issues. The role of sustainability in economic development, international trade relations and emerging technologies. Stakeholder perspectives and the effect of environmental and social issues on industrial performance.	x	x	x	x
Business	Tourism Management	Policy, Planning and Research in Tourism	449	The course focuses on research and analysis designed to formulate policy, programs, and development initiatives to create and maintain economically competitive tourism destinations that are sustainable from an environmental, social, and cultural perspective. Conceptual foundations are applied to real world issues in a planning and policy context.	x	x	x	x
Kinesiology	Kinesiology	Natural Environments, Wellness and Health	339	An exploration of how physical activity in natural, outdoor environments leads to enhanced physical fitness, wellness, and health. Safe practices in these environments will be examined in conjunction with practices that help maintain the ecological integrity of natural and wild environments.	x	x		x
Law	Law	Public Lands and Natural Resources Law	573	The protection, exploitation, and management of Crown-owned lands and renewable and non-renewable natural resources (other than oil and gas, and including forestry, rangeland, minerals, wildlife, fisheries, wilderness, recreational, and heritage). Discussion of the nature of public ownership, public and private values, economic approaches, and inter-jurisdictional management.	x	x		x
Law	Law	Water Law	583	Water resources and management, including the historical and current legal and policy frameworks governing surface and groundwater rights. Topics include responses to scarcity, alternative water management models and plans, industrial use and re-use of water, wetlands, protection of aquatic resources, aboriginal water rights, economic instruments, water as a human right, watershed approaches, and inter-jurisdictional or international issues.	x	x		x
Law	Law	Alternate Energy Law	617	The renewable energy and energy efficiency sectors. Topics include federalism, wind, small hydro, solar, biomass etc., energy conservation and demand side management, and access to energy infrastructure.	x	x		
Law	Law	Law of Species and Spaces	634	The principal federal and provincial laws governing the management of biological diversity, including protected area legislation and endangered species legislation. Explores the constitutional and common law fundamentals of wildlife law as well as contemporary disputes about species protection, ecosystem-level land management, and game ranch operations.	x	x		
Law	Law	Pollution Control and Waste Management Law	645	The provincial and federal pollution control regimes for air and water pollution and for the handling, storage, treatment, and disposal of hazardous and non-hazardous wastes. Topics include federalism; regulatory and non-regulatory approaches to pollution from "point" and "non-point" sources; cumulative pollutant loads; the "precautionary" and "polluter pays" principles; and liability for contaminated sites.	x	x	x	x
Medicine	Community Health Sciences	Social Construction: Health Capacity and Disability (CORE)	633		x			x
Medicine	Community Health Sciences	Global Health and Development	689		x	x	x	x
Medicine	Community Health Sciences	Economic Evaluation	662		x		x	
Medicine	Medical Science	Topics in Mountain Medicine and High Altitude Physiology	713		x			

Engineering	Civil Engineering	Environmental Engineering	481	Analyze and develop civil engineering solutions, at a conceptual level, to human health and environmental problems associated with human activities, fundamental aspects of air, water and land pollution, water quality assessment and control, environmental aspects of non-renewable energy development, introduction to sustainability concepts in construction and transportation, solid waste management technologies, introduction to land pollution prevention and control.	x	x		x
Engineering	Civil Engineering	Civil Engineering Aspects of Sustainable Communities	502	Definition of sustainability; global urbanization; emissions from transportation systems; economics of urban development from a civil infrastructure point of view, water/wastewater, land use/transportation; public transportation; travel demand management for sustainability; construction industry - energy use and emissions.	x	x	x	x
Engineering	Civil Engineering	Sustainable Infrastructure	506	Sustainability and durability issues of structural materials; properties and uses of non-renewable and recycled materials; energy efficient design and green material selection; life cycle cost analysis. Constructability. Aesthetics. Infrastructure management, inventory, assessment/monitoring, performance and remaining service life. Preservation of existing infrastructure; repair and rehabilitation, strengthening and retrofitting to extend service life of structures. Structural composites: properties and applications to improve performance and sustainability of infrastructure.	x	x		
Engineering	Electrical Engineering	Renewable Energy & Solid State Lighting for Human Development	581	Introduction to solid state lighting (SSL) and renewable energy (RE) systems. Topics include: history of lighting, illumination standards, incandescent bulbs, fluorescent tubes, White LEDs their properties and measurement; photovoltaic, wind power, hydro power, human and animal power, thermoelectric, biomass energy, biodiesel, fuel cells and SSL system design. SSL project planning and financing, environmental and social impact assessments, carbon credits and SSL system metrics for the developing world.	x	x	x	x
Engineering	Electrical Engineering	Renewable Energy and Solid State Lighting for the Developing World	669	History of Lighting, Illumination Measurements & Standards - Incandescent, Fluorescent, LEDs & OLEDs. Generation using Hydro, Solar, Photovoltaic, Wind, Thermoelectric, Biomass, Thermal. Energy Storage & Supply Chains. System Design, Analysis & Life Cycle Assessment. Kyoto Protocol, Carbon Credits and Trading.	x	x	x	x
Engineering	Energy and Environment, Engineering	Life Cycle Assessment	503	Concepts of life cycle analysis. Applications to energy utilization, environmental consequences, sustainable development, environmental process analysis, and optimization. Inventory, impact and improvement analyses of energy systems. LCA Model development and utilization. Human health and safety considerations.	x	x	x	x
Engineering	Energy and Environment, Engineering	Energy and Environmental Systems Analysis	555	Analyzes the technologies that energize industrial civilization by adopting a systems view of energy extraction, transformation and end-use, and of the interaction of energy technologies with the environment. Topics include energetics of natural systems and agriculture; formation, extraction, and transformations of fossil fuels; nuclear power; modern renewables such as biomass, solar and wind; electricity generation, transmission and economics; and, energy use in buildings. Energy systems operate within environmental constraints, arguably the most important of which is the need to reduce carbon dioxide emissions to slow climate change. Technical options for transforming energy systems to meet such environmental constraints will be assessed.	x	x	x	
Engineering	Energy and Environment, Engineering	Engineering Aspects of Sustainable Communities	573	Ecological footprint, life cycle assessment, sustainable construction, energy efficiency in buildings, intelligent and sustainable transportation, control of water/air pollution from mobile and stationary sources, energy from waste.	x	x	x	x
Engineering	Engineering	The Role and Responsibilities of the Professional Engineer in Society	513	The professional duties and responsibilities of the engineer as they relate to society. Ethics and the engineering profession. Public and worker safety and health. Design for safety. Sustainable development. The engineer and the environment. Environmental stewardship. Essentials of leadership. Gender issues. Employment equity. Fundamentals of Engineering Law. Professional organizations. The Engineering Professions Act.	x	x	x	x
Engineering	Mechanical Engineering	Fuel Science and Technology	629	Review origins of fuels, reservoir technology and geology. Past, present and future energy supply and demand. Classification of fuels. Physical and chemical properties. Fuel handling and fire hazards. Requirements of conventional and non-conventional power and heating plants. Ecological and efficiency considerations. Some non-conventional fuels.	x	x	x	x
Science	Science	Project Course in Sustainable Energy, Environment and Economy	529	Intended to achieve integration across the interdisciplinary energy, environment and economy programs.	x	x	x	x
Social Work	Social Work	Human Development and Environments	363	Explores the nature of human behaviour and development in diverse environments and contexts (personal, community, social, and environmental) and explores the implications for social work practice and theory.	x	x	x	x
Social Work	Social Work	Social Policy and Social Justice	632	An exploration of the social, political and economic forces, social movements and social structures that are transforming the Canadian welfare state and the practice of social work.	x		x	x
Veterinary Medicine	Veterinary Medicine	Animals, Health, and Society	323	Role of veterinarians in promoting animal, human and ecosystem health. Emphasis on the determinants of health and the interaction of animals, environmental and social factors that influence health. The contributions of veterinarians to human, ecosystem and animal health at local, provincial, national and international levels are reviewed. Demonstrates how laws, policies and management decisions are applied to foster healthy animals, ecosystems and human-animal interactions.	x		x	x
Veterinary Medicine	Veterinary Medicine	Ecosystem and Public Health Field Course	561	This course provides students the opportunity to synthesize concepts of Veterinary Medicine 323 and 440. Methods to apply integrated approaches in detecting, assessing and managing animal, human and ecosystem health relevant to sustaining populations, communities and systems are included. Students gain experience in risk assessment, surveillance, epidemiology, and participatory practice through work on case studies.	x	x		x

Interdisciplinary Programs	Architectural Studies	Sustainability in the Built Environment	423	The principle of sustainability recognizes people as temporary stewards of their environments, working toward a respect for natural systems and a higher quality of life. Examination of the built environment and the tools to achieve a stable and balanced and a regenerative ecosystem in a process of responsible consumption, wherein waste is minimized and the built environment interacts with natural environments and cycles. Healthful interior environments, resource efficiency, ecologically benign materials, renewable energies and social justice issues are examined.	x	x	x	x
Interdisciplinary Programs	Sustainable Energy Development	Sustainable Energy Development 605	605	Examines the inter-relationships between ecological systems, indigenous cultures and sustainable global development. Provides a case based analysis of selected issues and strategic management mechanisms for dealing with these issues in the energy project development and approval process.	x	x	x	x
Interdisciplinary Programs	Sustainable Energy Development	Strategic Environmental Planning for Energy Organizations	623	A strategic approach to managing environmental and social issues facing energy organizations and its economic rationale in a competitive global market place.	X	x	x	x
Other	Energy and Environmental Systems	Introduction to Energy and Environmental Systems	601	The course provides a structured overview to the interactions of energy systems and the environment. The lectures are taught collaboratively by several EESS faculty. The course aims to foster a unified, scientific understanding of energy flows and transformations in industrial society and the natural world; a scientific overview of some of the most important links between energy and environmental systems; and an introduction to the business, legal and regulatory systems that shape the interactions between energy and environment.	x	x	x	x
Other	University	Exploring Sustainability	207	A seminar-based survey course which examines principles, practices, obstacles and opportunities pertaining to sustainability. Potential issues to be explored include: Sustainability: Origins, Principles and Practices; Sustainable Development; Planning for Sustainability: The Campus, The City and Beyond; Resource Audits + Sustainability; Corporations and Responsibility; Government and Governance; Climate Change.	x	x	x	x
Other	University	Special Topics in Sustainability	511.01	Introduction to Sustainable Development	x	x	x	x
Other	University	Special Topics in Sustainability	611.01	Introduction to Sustainable Development	x	x	x	x