

Sustainability Course Catalogue - 2019/20

Title	Course #	Department	Level	Description	Type
Strategic Leadership and Sustainability	GMGT 7530	General Management	G	An examination of current issues in areas which could, for example, include: organizational behaviour, organizational theory, strategy, human resource management, sustainability, social issues and industrial relations.	Sustainability Focused
Research on CSR and Sustainable Development	GMGT 7530	General Management	G	An examination of current issues in areas which could, for example, include: organizational behaviour, organizational theory, strategy, human resource management, sustainability, social issues and industrial relations.	Sustainability Focused
Sustainability Marketing	MRK 7080	Marketing	G	A study of selected areas of recent development in the field of marketing. Topics may include the marketing of services, market research, business to business marketing, marketing channel systems, personal selling or sales management, and physical distribution.	Sustainability Focused
Architectural Technology 4 – Comprehensive Design Technology Report	EVAR 4008	Environmental Architecture	UG/G	A technical knowledge project-based course integrating with Arch Studio 4. Comprehensive technology issues include: site; material; energy; structures; construction; sustainability; environmental factors; building code; life safety. Student's work will include analysis, technical drawings and calculations.	Sustainability Focused
Fundraising for Indigenous Organizations	NATV 3160	Native Studies	UG/G	This course examines effective fundraising skills as critical for the longevity of many programs in the Indigenous community. While government fundraising is an important source, understanding grantsmanship and other funding strategies are critical for sustained program existence and effective use of scarce human and financial resources.	Sustainability Focused
Bioresource Engineering and Sustainability	BIOE 7350	Biosystems Engineering	G	Students will gain an understanding of overall sustainability of industrial activities, energy usage, and resource depletion. Course topics will include: environmental emissions (as it relates to air and water pollution, solid and hazardous wastes, noise and traffic impacts); life-cycle assessment and related techniques for evaluating sustainability; design improvements to enhance environmental performance of engineered systems; and methodologies for assessing social and economic impacts of new developments.	Sustainability Focused
Sustainability Economics	IDM 7090	Interdisciplinary Management	G	This is a graduate-level MBA course on a very specialized topic and is offered on an infrequent basis. Course content will be an examination of specialized topics or issues which may cross-pollinate with other business related areas. The overall aim of the course is to provide solid practical knowledge about a developing subject, to understand both implications and potential applications for organizations and their leadership today and in the future. Some topics could, for example, include Global Social Enterprise, Global Sales Distribution, Channel Management, Big Data and the Corporation, Infrastructure and Real Estate, and Coaching International Teams.	Sustainability Focused
Contemporary Themes in Business	IDM 7130	Interdisciplinary Management	G	This course exposes students to salient themes found in the modern business environment. Students will develop a broad appreciation for the challenges and opportunities presented by these contemporary themes (e.g. International and Emerging Markets: Sustainability: Entrepreneurship and Innovation).	Sustainability Focused
Sustainable Development and Natural Resources	NRI 7180	Natural Resource Management	G	An examination of the context, concepts, principles, and applications of sustainable development and natural resources at the international, national, and regional levels. Sustainable development is considered from three perspectives - environment, economy, and peoples' well-being. Particular attention is focused upon the implications of sustainable development for natural resources and environmental management.	Sustainability Focused
Sustainability, Economics, and Natural Resources	NRI 7182	Natural Resource Management	G	Economic aspects of sustainability are a critical component of sustainable development. The relationship between environment, economy, and the human dimensions of natural resources comprise the primary focus of the course. Specific topics include environmental/ecological economics, externalities, project assessment, benefit cost analysis, the economics of renewable and non-renewable resource management and economic aspects of globalization.	Sustainability Focused
The Role of Information Management in Sustainable	NRI 7200	Natural Resource Management	G	This course reviews some of the key concepts of spatial analysis including geographic information systems, remote sensing, image processing, and cartography. The second part of the course is based on the application of these concepts to a resource	Sustainability Focused
Environmental Justice and Ecosystem Health	NRI 7340	Natural Resource Management	G	Explores Ecosystem health and environmental justice issues to realize both the possibilities and barriers to sustainability. Risk, resource distribution and power/decision-making are analyzed across race, gender and class differences. Diverse views, theories and methods on community health consider well-being, quality of life, vulnerability and ecological integrity.	Sustainability Focused
Sustainable Livelihoods, Food Resources and Community Food Security	NRI 7370	Natural Resource Management	G	About one third of a household's total environmental impact is related to food considering all the effects of livestock, agriculture and the food industry on water, soil and air, the overuse of fish resources, transport and packaging waste. This course analyzes sustainable livelihoods and food security/sovereignty in the food system (production, processing, marketing, etc.).	Sustainability Focused
Peacebuilding and Social Justice	PEAC 7120	Peace and Conflict Studies	G	This course examines the role of peacebuilding in short term crisis intervention and longer term conflict transformation processes. Social justice is addressed at the systems level as it impacts the achievement of sustainable reconciliation. Crisis management in conflict settings, the root causes of conflict and its prevention are explored.	Sustainability Focused
Advanced Crop Production	PLNT 7660	Plant Science	G	A lecture-seminar course to investigate environmental, crop management and genetic limitations to growth, yield formation, yield, water use efficiency and quality of field, forage and horticultural crops. Interactions will be stressed and emphasis will be placed on sustainable crop production systems. Simple and complex relationships will be demonstrated using models.	Sustainability Focused
Introduction to Environmental Economics	ABIZ 2390	AgBusiness and AgEconomics	UG	Economics of management of water, air and land resources quality, and the economics of conservation. The economic implications of environmental standards, licensing criteria and pollution charges will be illustrated by current issues.	Sustainability Focused

Integrated Sustainable Agri-Food Systems	DAGR 0910	Agriculture Diploma	UG	The agri-food system encompasses how food is being produced, processed, transported, marketed and consumed. The three pillars of sustainability (economic, social and environmental) will be used to evaluate and improve agricultural sustainability, and will also be applied to the agri-food system (beyond production). Sustainable solutions are unique to each agricultural situation and require long-term thinking and evidence-based decision-making. Focus will be on the balance between food production practices and protecting the natural resources on which agriculture is reliant. There will be a full-day field trip	Sustainability Focused
Biological Diversity and Sustainability	BIOL 3600	Biological Sciences	UG	Anthropogenic drivers of change of many components of biological diversity; the resulting impacts on ecosystem capacity to provide on-going goods and services that are essential constituents of well-being and ultimately sustainability.	Sustainability Focused
Impact of Engineering on the Environment	BIOE 2480	Biosystems Engineering	UG	Students will gain an understanding of overall sustainability of industrial activities, life-cycle assessment techniques for sustainability, and design improvements to enhance environmental performance of engineered systems. This course will introduce basic methodologies for conducting environmental impact assessments, including physical, chemical, ecological, social and economic impacts.	Sustainability Focused
Biosystems Engineering Design 2	BIOE 3900	Biosystems Engineering	UG	An introduction to the use of reverse engineering to deduce design features from previously-designed products or systems. Considerations such as design for sustainability and design for disassembly will be discussed. Students will have opportunity to use reverse engineering principles i) to understand how components fit together to form functional systems, ii) to identify flaws and iii) to propose design improvements. Students will learn appropriate techniques for documenting the reverse engineering process. Theory of project management will also be taught and discussed.	Sustainability Focused
Environmental Science 1 – Concepts	ENVR 1000	Environment	UG	This course will introduce students to the conceptual framework of the environment by examining its physical, biological, and social components. General topics to be considered will include ecological principles and the responses of natural and managed systems to disturbance; population growth; biodiversity and conservation; and environmental sustainability.	Sustainability Focused
Environmental Science 2 – Issues	ENVR 2000	Environment	UG	This course will briefly review the major features of the structure and function of natural systems along with the degree to which these have been compromised. The main component of the course, however, will concentrate on the identification of the issues that underlie environmental degradation, while exploring alternative conditions that have the potential to reverse current trends and ultimately contribute to ecological sustainability.	Sustainability Focused
Environmental Technology	EVDS 1680	Environmental Design	UG	An examination of the scientific principles embodied in the natural laws which govern the science and technology of building, landscape and environmental design in the context of sustainable development. Factors of climate, geology and natural resource systems and their effects upon the built environment at a range of scales are introduced.	Sustainability Focused
Materials and Assemblies	EVDS 2300	Environmental Design	UG	This course provides an introduction to applied statics, construction materials and construction system assemblies for landscape, building, and interior constructions. Construction material properties and applications, including impacts on resource depletion and on sustainable building practices will be introduced along with basic strategies and methods to analyze and calculate forces in simple structures.	Sustainability Focused
Natural and Human Systems	EVDS 2702	Environmental Design	UG	An application of the scientific principles embodied in the natural laws which govern environmental design. Aspects of the bio-physical factors, energy, human physiology and perception, comfort, and resource management are reviewed in the context of sustainable planning and design practices.	Sustainability Focused
Business and Society	GMGT 1010	General Management	UG	The course will provide overarching frameworks to examine the nature, role, and importance of business in society. Key internal operations of business organizations will be discussed (e.g. finance, marketing, operations), but the majority of the course examines the relationships that business firms must balance among key stakeholders in their external environment (i.e. government, owners, customers, communities, suppliers, future generations, etc.). Students will examine various institutional contexts (e.g. economic, political-legal, and socio-cultural) and critically think about relationships between business and society, mindfully considering alternative approaches to management. Special emphasis will be placed on contemporary social issues in business (e.g. sustainable development, corporate social responsibility).	Sustainability Focused
Gender, Transport and Social Justice	WOMN 2610	Women's and Gender Studies	UG	Examines the gendered impact of uneven access to transportation. Using feminist theories of gender and mobility, it considers claims that mobile women are in danger, and that different forms of transportation have gendered cultures. It studies the links between imperialism, development, and transportation. The course also examines the particular ways in which transportation disadvantage, automobility, limited public transit services, and aging in place affect women as well as initiatives to promote sustainable transportation	Sustainability Focused
Environmental Policy	ABIZ 3550	AgBusiness and AgEconomics	UG/G	Environmental policy development and enactment in Canada; federal and provincial review processes; socio-political aspects of policy development; chemical and pesticide licensing procedures and environmental effects monitoring; environmental policy and sustainability; case studies; discussion of various policies; ethics of development, preservation and conservation; environmental risk management.	Sustainability Focused
Sustainable Construction	CIVL 4500	Civil Engineering	UG/G	This course will cover contemporary topics in Civil Engineering. The specific topics and a detailed outline will be available at the time of registration prior to the start of the registration period for the session in which the course will be offered.	Sustainability Focused
Pedagogy for Sustainable Well-being: Science, Mathematics and Social Studies	EDUB 4010	Education Curric, Tchg & Lrng	UG/G	An exploration and critical reflection on theory, research, and practice in education for sustainability in science, mathematics, and social studies and the ways in which multiple literacies can assist children in consolidating their knowledge and understanding of sustainable well-being. Course offered off-campus.	Sustainability Focused

Ecology and Design 2	EVLU 3004	Envir. Design Landsc & Urban	UG/G	This course will focus on an examination of ecological and technological perspectives on the planning, design and making of the physical environment. This will include a meshing of prediction and advocacy concerning new models of sustainable urbanization, focusing on green technology and infrastructure. Key theories and their application to landscapes at varied scales will be considered along with salient literature, current issues, design precedents and potentials for creative expression and interpretation.	Sustainability Focused
Studio 3	EVLU 3006	Envir. Design Landsc & Urban	UG/G	A studio/lecture course that examines the notion of dwelling through spatial design with a concentration at the scale of the precinct in the private to semi-private realm focusing on the needs of the individual, on spatial qualities, materials, and site design detail. Theoretical, analytical, conceptual, design, planning and communication skills in landscape + urbanism will be developed and applied in distinct projects. Emphasis is on habitat by design, issues of contested space, ecological design and sustainability. The course may include a field trip (location and cost to be determined on a yearly basis) and will include an obligatory pre-term drawing workshop.	Sustainability Focused
Sustainable Manitoba	ENVR 3850	Environment	UG/G	This course approaches local sustainability issues from an interdisciplinary perspective. By looking at the ecological, social and economic aspects from a variety of discipline perspectives, a fuller understanding of sustainability is achieved. The broad range of perspectives is achieved through participation of guest speakers from other faculties and outside of the university as well as excursion outside the classroom.	Sustainability Focused
Sustainable Water Management	ENVR 4000	Environment	UG/G	Selected topics of current interest in the Environmental Sciences and Studies related to sustainable water management. Course content to vary with each offering depending on the needs and interests of students and faculty.	Sustainability Focused
Materials, Assemblies and Detailing	EVIE 3004	Environmental Interior Environ	UG/G	Workshop and lecture course on materials, joinery and invention. Review of the principles of framing, bracing, and tension applied to casegoods and furniture; exploration of a variety of soft and hard materials and constructions with an emphasis on sustainability.	Sustainability Focused
Sustainable Manitoba	GEOG 3850	Geography	UG/G	This course approaches local sustainability issues from an interdisciplinary perspective. By looking at the ecological, social and economic aspects from a variety of discipline perspectives, a fuller understanding of sustainability is achieved. The broad range of perspectives is achieved through participation of guest speakers from other faculties and outside of the university as well as excursion outside the classroom. Not to be held with ENVR 3850.	Sustainability Focused
Cropping Systems	PLNT 3510	Plant Science	UG/G	Examination and analysis of sustainable prairie cropping systems. Emphasis will be placed on integrated systems that optimize the benefits of crop rotation, and conserve soil, water and wildlife resources. Conventional, traditional and alternative crop production systems will be discussed. Includes a limited number of tutorials to allow for field tours and guest speakers.	Sustainability Focused
Ecology and Society	SOC 3838	Sociology	UG/G	Examines changing patterns of social organizations of civilizations, the resultant social constructions of the human/nature interface, the human social contribution to the global ecological crisis, and possible strategies to create sustainable societies. Consideration of topics such as population, consumption, capitalism, and agricultural practices.	Sustainability Focused
Soil and Water Management	SOIL 4510	Soil Science	UG/G	Topics include: capability of land for agriculture; storage, movement and use of water; saline and alkaline soils; soil conservation including erosion; sustainability of soil organic matter; effect and fate of soil amendments	Sustainability Focused
Beekeeping	ENTM 0610	Entomology	UG	Introduction to beekeeping that includes economics and marketing of honey and beeswax, equipment and its construction, pollen and nectar plants, pollination, management systems, diseases and pests, honey handling, package bees, wintering of bees, etc.	Sustainability Related
Clinical and Molecular Cytogenetics	BGEN 7180	Biochem. And medical Genetics	G	Cytogenetic methodology; chromosome architecture; karyotype interpretation; indications for referral; chromosome syndromes and anomalies; prenatal diagnosis; chromosomal basis of oncogenesis; flow cytometry; immunogenetics; fluorescent in situ hybridization; the application of molecular technology to chromosome analysis.	Sustainability Related
Critical Thinking in Biological Sciences	BIOL 7220	Biological Sciences	G	A core graduate level course within the Ph.D. program designed to stimulate discussion and thought in key areas applicable to the student's research discipline related to biological sciences	Sustainability Related
Analysis of Ecological Data	BIOL 7600	Biological Sciences	G	A general topics course to reflect an in-depth study of current interest topics to extend or acquire specialized knowledge in a particular area of biological interest. A subtitle may be added to the current title to reflect specialized interests.	Sustainability Related
Plant Stress Physiology	BIOL 7600	Biological Sciences	G	A general topics course to reflect an in-depth study of current interest topics to extend or acquire specialized knowledge in a particular area of biological interest. A subtitle may be added to the current title to reflect specialized interests.	Sustainability Related
Plant-Herbivore Interactions	BIOL 7600	Biological Sciences	G	A general topics course to reflect an in-depth study of current interest topics to extend or acquire specialized knowledge in a particular area of biological interest. A subtitle may be added to the current title to reflect specialized interests.	Sustainability Related
Urban Development	CITY 7340	City Planning	G	The mechanics of urban development and its socio-economic implications and underlying political forces. Practical field experience is involved in the form of an internship	Sustainability Related
Planning Design 1	CITY 7410	City Planning	G	Studio/workshop developing problem solving techniques and design skills in an area subject to environmental, social and economic change. Preparation of a planning report comprising of research and analysis, evaluation of feasible alternative strategies and designs, synthesis and recommendations for implementation. Case studies from planning journals and planning practice in cities and regions.	Sustainability Related
Health Policy and Planning	CHSC 7300	Sciences	G	and critique the substance, process and outcome of policy papers that address contemporary policy issues.	Sustainability Related
Disability Studies	DS 7010	Disability Studies	G	Explores the key concepts and issues in disability studies. Includes a critical examination of models and theories of disability,	Sustainability Related

Evaluation and Application of Research Methods in Disability Studies	DS 7030	Disability Studies	G	Provides a critical evaluation of quantitative and qualitative research methodologies used in disability studies. Methods to address disability used in different disciplines as well as transformative and empowerment methodologies such as participatory action and feminist disability research will be examined.	Sustainability Related
Environment and Disability	DS 7040	Disability Studies	G	One key theme will be chosen for each year from the interests and availability of faculty. Topics could include women with disabilities, international dimensions of disability, disability policy and practice, disability organizing and other topics developed over time.	Sustainability Related
Sacred Lands	GEOG 7010	Geography	G	Advanced study of a selected topic from any one of the department's fields of specialization such as sacred lands.	Sustainability Related
Political Ecology, Discourse and Power	GEOG 7010	Geography	G	Advanced study of a selected topic from any one of the department's fields of specialization such as political ecology, disclosure and power.	Sustainability Related
Ecosystem Management	GEOG 7010	Geography	G	Advanced study of a selected topic from any one of the department's fields of specialization such as ecosystem management.	Sustainability Related
Global Climate Change	GEOG 7010	Geography	G	Advanced study of a selected topic from any one of the department's fields of specialization such as global climate change.	Sustainability Related
Human Environmental Relation in the Arctic	GEOG 7010	Geography	G	Advanced study of a selected topic from any one of the department's fields of specialization such as human environmental relation in the arctic.	Sustainability Related
Theory Seminar 1 – Contemporary Issues in Design	IDES 7180	Interior Design	G	A theoretical exploration of contemporary design issues as they apply to Interior Design, supporting the work of design studio. Historical precedent in relation to human activity, sensory stimulus, technological and social change, ecological awareness, and aesthetic judgment forms the context for discussion and debate.	Sustainability Related
Exercise Rehabilitation for Persons with Disabilities	REHB 7070	Medical Rehabilitation	G	The student shall acquire a better understanding and increased knowledge of: the application of endurance exercise testing and training principles with disabled individuals; and the practical application of these skills	Sustainability Related
Ecological Dimensions of Resource and Environmental Management	NRI 7232	Natural Resource Management	G	Current concepts and theories in landscape ecology, plant and animal ecology, life-history strategies, food webs, and population and community ecology are discussed as they relate to management. Common themes throughout the course include the importance of scale, the influence of science on management, adaptive management, and critical thinking.	Sustainability Related
Environmental Management Practice	NRI 7252	Natural Resource Management	G	Environmental Management systems (e.g. 14001 and Natural step), best management practices and project management. Tools: Awareness (Environmental Policy, Environmental Impacts, Risk Assessment, Life Cycle Assessment), Action (Objectives, Targets, Risk Reduction, Indicators, Monitoring, Activities), Advance (Sustainability Report, Triple Bottom Line, Environmental Audit).	Sustainability Related
Supply Chain Sustainability	OPM 7300	Operations Management	G	A study of recent developments in production systems and management. Topics include systems design, plant location and layout, inventory systems planning and control.	Sustainability Related
Violence Intervention and Prevention	PEAC 7040	Peace and Conflict Studies	G	Examines different definitions and types of violence from the interpersonal to the global levels (e.g., family violence, youth and gang violence, violence in the workplace, hate crimes, and war). Theories of human aggression and causes of violence, as well as approaches for violence intervention and prevention are reviewed. Theories of nonviolence are explored.	Sustainability Related
Applied Qualitative Research: Making a Difference	GEOG 7010	Geography	G	Advanced study of a selected topic from any one of the department's fields of specialization related to making a difference in society.	Sustainability Related
Economics of World Food Issues and Policies	ABIZ 1010	AgBusiness and AgEconomics	UG	Determinants of global food consumption, production and the factors underpinning food security and malnutrition. The importance of international trade in balancing countries' supply and demand for food, examination of trade barriers and institutions facilitating trade.	Sustainability Related
Animal Health and Welfare	ANSC 0600	Animal Science	UG	This course explores the common livestock and poultry diseases of the Prairie provinces. Emphasis will be placed on prevention through management and health programs, but treatment of specific diseases will also be addressed. Additionally, animal welfare as it relates to commercial animal production will be discussed.	Sustainability Related
Principles of Ecology	BIOL 2300	Biological Sciences	UG	Principles of ecology at the individual, population, community, and ecosystems levels. This course is also offered as AGECE 2370.	Sustainability Related
Forest Botany	BIOL 3280	Biological Sciences	UG	An examination of the structure and dynamics of plant communities in forested ecosystems. Topics include forest type classification, physiological and anatomical responses of representative forest species, decomposition and nutrient cycling, disturbance and forest succession.	Sustainability Related
Medical and Hallucinogenic Plants	BIOL 3290	Biological Sciences	UG	A botanical and historical survey of medicinal, hallucinogenic and poisonous plants used in various cultures.	Sustainability Related
Foundations of Population Ecology	BIOL 3310	Biological Sciences	UG	The study of living populations, through experimentation and theory, will be examined. Topics investigated will include population regulation, competition, predation, disease, harvest, nonlinear and spatial dynamics and individual based models	Sustainability Related
Community Ecology	BIOL 3312	Biological Sciences	UG	Lectures and laboratories emphasizing the structure and function of terrestrial biotic communities with emphasis upon selected Manitoba situations.	Sustainability Related
Boreal Ecology	BIOL 3318	Biological Sciences	UG	A survey of ecological factors in the formation, evolution, and survival of northern biota including northern peoples. There will be optional weekend field trips.	Sustainability Related
Environmental Plant Physiology	BIOL 3452	Biological Sciences	UG	An integrated study of the major physiological processes in higher plants, and how these processes influence growth and development of plants in natural ecosystems. Stress responses of plants to water, temperature, light and nutrients will be emphasized	Sustainability Related

Environmental Physiology of Animals 2	BIOL 3472	Biological Sciences	UG	This course is intended to acquaint students with the control and integration of organ systems and body functions of animals, and their biochemical and physiological adaptations to environmental perturbations. Areas covered may include neuroendocrinology, excretion, and water, salt, and acid-base balance.	Sustainability Related
Development Biology	BIOL 3542	Biological Sciences	UG	Principles and concepts of development biology will be presented including early embryo development, tissue patterning, morphogenesis, germ cell formation, stem cell biology, organ and nervous system development, growth and regeneration. Fundamental developmental concepts as well as the cellular, genetic and molecular mechanisms behind development will be covered utilizing invertebrate, vertebrate and plant examples.	Sustainability Related
Plant Anatomy	BIOL 3550	Biological Sciences	UG	A study of the anatomical aspects of the growth and development of plants cells, tissues and organs	Sustainability Related
Introduction to Canadian Economic Issues and Policies	ECON 1210	Economics	UG	The general purpose of this course is to examine Canadian microeconomic issues and policies from a broad based economic perspective. This course introduces the standard microeconomic tools, concepts and analysis and contrasts them with their theoretical and institutional critics.	Sustainability Related
Geography of Culture and Inequality	GEOG 2640	Geography	UG	An introduction to the cultural geographic study of human and place inequalities, focusing on behaviour in landscape, group differences, and human identities.	Sustainability Related
Modern Canada	HIST 2286	History	UG	This course addresses the history of Canada since the First World War with attention to social, political, economic, diplomatic and cultural topics such as: interwar and postwar life, struggles for equality, international and internal conflict, immigration, new technologies, nationalism, aboriginal affairs, the arts and Canada's role in the world.	Sustainability Related
Food: Facts and Fallacies	HNSC 1200	Human Nutritional Sciences	UG	This course will present facts and fallacies about food from harvest to market forms. Emphasis will be placed on technological development, consumer concerns and factors affecting nutritional quality. Current issues related to food safety and nutritional trends will also be discussed.	Sustainability Related
Nutrition for Health and Changing Lifestyles	HNSC 1210	Human Nutritional Sciences	UG	This course addresses the relationship between nutrition and health. The focus is on healthy eating and on strategies for modifying food patterns within the context of lifestyle and culture	Sustainability Related
Principles of Food Preparation and preservation	HNSC 2160	Human Nutritional Sciences	UG	Food preparation, preservation, handling and storage; quality and safety implications; scientific basis for culinary practice; use and application of equipment.	Sustainability Related
Language and Gender	LING 1420	Linguistics	UG	In exploring the relationship between language and gender, this course addresses such questions as: how are gender differences manifested and perpetuated through language use?; is there such a thing as "women's language"?; how do gender differences influence communication between women and men?; how does gender interact with (for example) race, class and sexuality with respect to language use? In addition, we consider issues of language structure, including sexism in English and the relative success of gender-based language reform efforts.	Sustainability Related
Ethics and Society	PHIL 2290	Philosophy	UG	An examination of some contemporary ethical theories and their application to a number of practical issues. Issues to be discussed may include: reverse discrimination, freedom of expression, paternalism, and theories of punishment.	Sustainability Related
Ethics and the Environment	PHIL 2750	Philosophy	UG	An examination of some important ethical issues connected with environmental pollution and resource depletion. Examples to be covered include: the ideal of liberty and environmental limits; scarcity and the ideal of justice; growth vs. steady-state economics; animal rights, and survival ethics vs. welfare ethics.	Sustainability Related
Introduction to Microsociology	SOC 1211	Sociology	UG	Systematic introduction to the sociological perspective: theoretical points of view, methods and fields of research. Introduction to the study of socialization, groups, family, school, minorities, sexual roles.	Sustainability Related
Limnology	BIOL 3370	Biological Sciences	UG	Lectures and laboratories providing an introduction to the physics, chemistry and biology of lakes.	Sustainability Related
Economics of Food Policy	ABIZ 3510	AgBusiness and AgEconomics	UG/G	Economics of market intervention; trade policy analysis, and agricultural protection, exports, subsidies, tariffs, quotas; intermediate versus final goods; currency exchange rates and agricultural trade policy; trade agreements.	Sustainability Related
Farm Management	ABIZ 3530	AgBusiness and AgEconomics	UG/G	Management decisions and business planning as they relate to farm production, marketing and financing activities. Identifying potential markets; comparative advantage analysis; organizational form and contractual requirements; alternative marketing and production strategies; financing production and marketing activities; develop farm business plan	Sustainability Related
Genetics 2	BIOL 3500	Biological Sciences	UG/G	The course complements Genetics I (BIOL 2500, BIOL 2501) and deals with various aspects of linkage and crossing over, gene function, allelism, mutation and repair, the use of bacteria and viruses as genetic tools, basics of developmental genetics and extra-nuclear inheritance.	Sustainability Related
Biology of Fishes	BIOL 4210	Biological Sciences	UG/G	Lectures survey organ systems, life history, and the population biology of fishes. The ecological analysis of fish communities is addressed through a field trip and a series of workshops on the analysis of field data. Evaluation is based upon work related to the field trip and examinations based upon the lecture material.	Sustainability Related
Biology of Birds	BIOL 4216	Biological Sciences	UG/G	Biology of birds including: morphology, systematics, evolution, life histories and breeding biology, ecology, migration, and distribution of birds.	Sustainability Related
Biology of Mammals	BIOL 4218	Biological Sciences	UG/G	Structure, classification, evolution, life histories and distribution of mammals and their relation to human cultures. Techniques of studying mammals. Identification of the mammals of Manitoba	Sustainability Related
Analysis of Biological Communities	BIOL 4312	Biological Sciences	UG/G	A survey of methods and approaches to the analysis of biological and environmental data containing many variables. Offered in alternate years.	Sustainability Related
Aquatic Botany	BIOL 4374	Biological Sciences	UG/G	This course examines the relationship between algae, fungi and macrophytes, and the physical, chemical and biological properties of the aquatic environment. Specific adaptations to life in water, and patterns of distribution and succession in rivers, lakes and wetlands will be covered.	Sustainability Related

Revegetation of Disturbed Lands	BIOL 4400	Biological Sciences	UG/G	A physiological and ecological study of disturbed plant communities with emphasis on stresses associated with both mining activities and agricultural practices and processes of assisted recovery.	Sustainability Related
Comparative Animal Energetics	BIOL 4460	Biological Sciences	UG/G	Energetic strategies of animals living in ecologically diverse environments. Integration of physiological, morphological and behavioural adaptations with an emphasis on vertebrate species.	Sustainability Related
Biology and Society	BIOL 4650	Biological Sciences	UG/G	An exploration of the intersection of biology with society and the societal implications of research in areas such as genetics, biotechnology, ecology and evolution through lectures and tutorials. The course will examine how biological research is presented in the public sphere, and consider common public misunderstandings of the science. Students will examine some of the ethical issues that arise in the practice and application of biological sciences and develop skills in the communication and clarification of biological principles to the public.	Sustainability Related
Environmental Engineering Analysis	CIVL 3690	Civil Engineering	UG/G	Introduction to environmental engineering analysis concept, risk assessment, colloidal dispersions, mass balances, reaction kinetics, and reactor design principles. Water pollution and water quality in rivers and lakes. Physical, chemical and biological unit operations and processes applied in water and/or wastewater treatment. Meteorology and air pollution; atmospheric dispersion. Solid waste management issues.	Sustainability Related
Environmental Engineering Design	CIVL 3700	Civil Engineering	UG/G	Design principles are developed for water, solid/soil and air pollution control. Application of the principles in design projects which may include surface and groundwater remediation, solid waste management, landfilling, soil remediation and site assessment; municipal and industrial wastewater treatment; odour and air pollution abatement facilities	Sustainability Related
Hydraulics	CIVL 3740	Civil Engineering	UG/G	Hydraulics of uniform and gradually varied flow; backwater computation and classification of surface water profiles; hydraulic jumps, spillways, and stilling basins; flow over weirs; hydraulic models; theory of turbo-machinery.	Sustainability Related
Hydrology	CIVL 3750	Civil Engineering	UG/G	Basic hydrological processes; precipitation; evapotranspiration; infiltration and runoff; analytical methods; hydrograph theory and application; application to reservoir design; project floods and flow forecasting; statistical analysis	Sustainability Related
Transportation Engineering 1	CIVL 3790	Civil Engineering	UG/G	Overview of Canada and U.S. transport systems. Fundamentals of transport systems analysis. Introduction to sequential demand modeling. Analysis and evaluation of uninterrupted flow on highways. Basics of geometric design of highways. Basics of design of at-grade intersections. Introduction to computer applications in transportation engineering. Basics of pavement engineering and design.	Sustainability Related
Water Treatment Plant Design	CIVL 4120	Civil Engineering	UG/G	Design of unit processes used in potable water treatment plants: solid/liquid separation, oxidation, coagulation, filtration, adsorption and disinfection. Determination of design parameters through laboratory studies. Water treatment plants design standards and guidelines.	Sustainability Related
Groundwater Contamination	CIVL 4200	Civil Engineering	UG/G	Introduction to the principles of groundwater chemistry; chemical evolution of natural groundwater flow systems; sources of contamination; mass transport processes; hydrochemical behaviour of contaminants; nuclear waste disposal; non-aqueous phase organics; aquifer remediation.	Sustainability Related
Geotechnical Engineering	CIVL 4230	Civil Engineering	UG/G	Case-history approach to geotechnical engineering practice from civil and mining engineering; relationship between predicted and observed behaviour; surface and shallow footings; propped walls and bulkheads; rock and soft ground tunneling; deep foundations; rock and soil slopes; culverts; geoenvironmental problems	Sustainability Related
Water Resources Planning and Management	CIVL 4360	Civil Engineering	UG/G	Introduction to the theory and application of water resources planning and management as a constrained optimization problem with multiple conflicting objectives. Water laws including international, inter-provincial and local regulations will be discussed. The process for planning a water resource project, including identifying the problems and opportunities, resource and demand forecasting, plan formulation and evaluation, and optimization will be discussed.	Sustainability Related
Cross-Cultural Education	EDUA 3420	Education Admin, Fndns & Psych	UG/G	Theory and practical applications related to understanding the complexities of culture, race, ethnicity, social inequality in classrooms, focusing on Aboriginal groups, immigration, and the needs of students in culturally diverse classrooms.	Sustainability Related
Gender and Sexual Diversity in Education and Community	EDUA 5080	Education Admin, Fndns & Psych	UG/G	This course explores the various historical, political, and social struggles facing lesbian, gay, bisexual, trans*, two-spirit, and queer (LGBT2Q) people in educational contexts and their communities. The course explores LGBT2Q experiences with, and concerns relating to, policy, curriculum, administration, school experience, support, pedagogy, and community organizations. Students in this course will learn strategies on how to make their work environments more inclusive of gender and sexuality diversity.	Sustainability Related
Introduction to Inclusive Special Education (Part A)	EDUA 5600	Education Admin, Fndns & Psych	UG/G	A survey course for educators interested in inclusive special education - legislative, pedagogical, attitudinal and systemic barriers to inclusion and exemplary inclusive provisions are covered.	Sustainability Related
Environmental Responsibilities and the Law	ENVR 3160	Environment	UG/G	Environmental responsibilities and their legal framework in terms of policies, legislation, standards and guidelines and the tools to manage responsibility are examined through lectures, case study review and discussion. Environmental liability and due diligence are reviewed in relation to responsibilities of organizations and individuals. Strategies to manage environmental liabilities, including environmental and risk assessment, are also discussed.	Sustainability Related
Ecosystem Management	ENVR 4050	Environment	UG/G	This course will provide students with an understanding of the practical applications of ecological science, environmental policy, and resource management approaches in the large-scale planning of landscapes. The course will review ecological principles and trace the historical development of the ecosystem concept. Comparisons are made to other possible environmental management approaches. The synthesis of major elements and concepts will be reinforced through case studies on the Manitoba landscape, with an emphasis on practical learning by students through field seminars and group discussions	Sustainability Related

Architecture Design Studio 4	EVAR 4010	Environmental Architecture	UG/G	The previous terms investigations are further developed and synthesized into a comprehensively designed environment. Architectural propositions seek to clarify specific relations between details and the overall design, through the integration of complex social, cultural, programmatic, theoretical, historical, technological, material and environmental principles, systems and criteria.	Sustainability Related
Food Analysis 2	FOOD 4250	Food Sciences	UG/G	Advanced techniques employed in the physico-chemical analysis of food products as preparation for research, development, and inspection roles in government and in industry.	Sustainability Related
Social Geography of the Environment	GEOG 3640	Geography	UG/G	This course provides an intermediate-level assessment of current geographical approaches to society and environment. Students are exposed to critical realist, social constructionist, Marxist, feminist and post-Colonial traditions as they are applied to environmental and social justice, globalization and public health.	Sustainability Related
Sunshine, Freedom and a Little Flower: Geography and Wellbeing	GEOG 3770	Geography	UG/G	This course will vary from year to year depending on the needs of students and the interests of instructors.	Sustainability Related
Biological Oceanography 1: Lower Trophic Levels	GEOG 3920	Geography	UG/G	In this course, students will gain a background on the study of biological oceanography. Biological oceanography is a very active and important field of study worldwide due to the spatial coverage and biological activity of the world's oceans. This course examines the interaction of marine organisms with other biological life, as well as with the physical environment.	Sustainability Related
Advanced Methods of Remote Sensing	GEOG 4200	Geography	UG/G	Provides instruction in the current theory and application of remote sensing technology to Earth system Science. Emphasis will be placed on the processing and interpretation of remote sensing imagery and the integration of remote sensing data with other spatial data.	Sustainability Related
Sacred Lands	GEOG 4260	Geography	UG/G	Students will increase their understanding of the importance and significance of Sacred Lands and Sacred Spaces to International Indigenous Peoples. Experiential learning, seminars, and a field component may be included.	Sustainability Related
Social History of Health and Disease in Modern Canada	HIST 3680	History	UG/G	This course explores the history of health and health care in Canada, with a focus on the late 19th and 20th centuries. Topics will include colonization, infectious disease, and Aboriginal health; the evolution of medical and nursing professions; the emergence of the modern hospital; mental health, psychiatry and the asylum; cancer; alternative therapies; childbirth; health and old age; and health and the state. Analytical categories of gender, race, ethnicity, class, and sexuality will run throughout the material.	Sustainability Related
Food Geographies	HNSC 3870	Human Nutritional Sciences	UG/G	This course provides a critical examination of the geographies of food at a variety of scales, from the body to the global. The course focuses on themes in three interconnected areas: 1) food production and the global food system from farm to plate including agribusiness and alternative food production and distribution models; 2) food consumption habits and beliefs and foodways as geographically contingent material culture; and 3) food (in) security and its relationship to health and wellbeing.	Sustainability Related
Food, Nutrition and Health Policies	HNSC 4290	Human Nutritional Sciences	UG/G	Principles and applications of policies, regulations and legislation in the areas of food and health that address nutrition and health problems of populations.	Sustainability Related
Physical Activity and Aging	KIN 3510	Kinesiology	UG/G	The study of the aging process and the effects of exercise and lifestyle factors on the health and fitness of the aging adult. This is an Option in Aging course	Sustainability Related
Aboriginal Law Crime Justice and Family	LAW 3980	Law	UG/G	The course will cover legal issues related to Aboriginal peoples in both the criminal justice system and the family law systems. Examples include the potential application of the Canadian Charter of Rights and Freedoms to Aboriginal legal systems, the application of the organized crime provisions in the Criminal Code to Aboriginal gangs, extensive consideration of the Gladue judgment and its current applications in Canada, the R. v. Williams judgment as it concerns Aboriginal accuseds and trial fairness, special provisions in the Corrections and Conditional Release Act that make specific reference to Aboriginal inmates, Aboriginal customary adoptions, specific provisions of the Indian Act and other legislation dealing specifically with matrimonial property on Indian reserves, and Aboriginal perspectives on child welfare	Sustainability Related
Virology	MBIO 4410	Microbiology	UG/G	A comprehensive examination of fundamental properties of viruses, virus taxonomy, and the different ways in which viruses replicate. The ways viruses cause disease and experimental methods used in virology also will be examined.	Sustainability Related
Women, Crime and Social Justice	SCO 3790	Sociology	UG/G	The course examines gender differences in crime, theories of women's crime and the treatment of women offenders and victims by the criminal justice system.	Sustainability Related
Carbon Policy Impacts on Agriculture through Mathematical Modelling	ABIZ 7300	AgBusiness and AgEconomics	G	Application of economic analysis to contemporary problems in agriculture.	Sustainability Related
Agricultural Policy	ABIZ 7380	AgBusiness and AgEconomics	G	Bearing of economic theory on agricultural policy: relevance of allocative efficiency, distributive equity and other criteria, and economic evaluation of alternative policies	Sustainability Related
Advanced Theory of Resource Economics	ABIZ 7430	AgBusiness and AgEconomics	G	Economic theory of the development and management of natural resources. Application of capital theory, investment theory, the theory of externalities and decision-making theories to resource utilization and management. A strong background in microeconomics is required.	Sustainability Related
Production Economics	ABIZ 7940	AgBusiness and AgEconomics	G	Development of static microeconomic theories of the firm, functional forms, aggregation issues, productivity analysis, risk and uncertainty, and an introduction to dynamics. The following are emphasized; a rigorous treatment of the models using duality; a critical understanding of the limitations and possibilities for generalizing the models; and relevance of the models for empirical research, especially in agriculture.	Sustainability Related

Anthropology and The Land	ANTH 4780	Anthropology	G	Relation with humans to land over time. Problems in ethnological research. The course content may vary	Sustainability Related
Growth, Development & Plasticity in Human Health	ANTH 7930	Anthropology	G	Special problems in Human Biology. The course content may vary.	Sustainability Related
Arch Studio 5 and Comprehensive Program Report	ARCH 7050	Architecture	G	Develop design explorations and seek to clarify relations between architectural criteria and the urban/natural environments in national or international contexts. Conceptual, programmatic, material, technological, economic, and political principles and systems employed are to be evident in the Comp. Prog Report.	Sustainability Related
Arch Studio 6	ARCH 7060	Architecture	G	The previous term's investigations are further developed into a comprehensive architectural design proposal. The thorough integration of design and programming criteria, with building and environmental systems and assemblies are examined.	Sustainability Related
Topics in Environmental Process 1	ARCG 7070	Architecture Interdisciplinary	G	A course designed for graduate students in the departments of Architecture, Landscape Architecture, and City Planning to pursue interdepartmental studies in environmental processes and design	Sustainability Related
Clinical Genetics 1	BGEN 7142	Biochem. And medical Genetics	G	Clinical applications and principles of single gene, multifactorial, nontraditional inheritance teratogenic causes of disease. Focus on the role of the genetic counsellor in the clinical setting, including history and practice of genetic counselling, genetic counselling skills and case documentation	Sustainability Related
Clinical Genetics 2	BGEN 7144	Biochem. And medical Genetics	G	This course builds on the genetic counselling clinical skills developed in BGEN 7142 course. The genetic counselling approach to rare and common genetic/metabolic conditions in the adult and pediatric populations is discussed. The roles of the genetic counsellor, clinical geneticist, other medical specialist and allied health in an interdisciplinary approach to patient care is explored.	Sustainability Related
Biomedical Ethics	BME 7040	Biomedical Engineering	G	The goal of this course is to introduce the ethical issues encountered in biomedical research. The course presents several actual examples and offers the fundamental ethical rules of any biomedical research.	Sustainability Related
Advanced Irrigation and Drainage	BIOE 7140	Biosystems Engineering	G	Selected advanced problems and new developments in irrigation and drainage. Interrelationships between irrigation and drainage and the environment	Sustainability Related
Advanced Topics on Light-Frame Buildings	BIOE 7230	Biosystems Engineering	G	Structural and environmental design and analysis of light-frame buildings. Topics include: loads in light-frame buildings; frame design; construction management; environmental control in light-frame buildings; and structure-environment interactions	Sustainability Related
Planning Theory 1	CITY 7030	City Planning	G	The principal ideas and ideals influencing planning thought and practice, ranging from rational comprehensive planning to theories of societal guidance, ethics and the human-environment interface.	Sustainability Related
Housing and Urban Revitalization	CITY 7070	City Planning	G	Housing and urban revitalization in the Canadian context. Housing demand and supply, structure of the housing market, Canadian housing policy, affordability and other selected housing issues; processes and strategies related to urban decline and revitalization.	Sustainability Related
Planning Design 3	CITY 7430	City Planning	G	The application of urban design theories and techniques to a large scale urban area of complex land uses and community development issues. The studio is also open to advanced students in architecture, landscape architecture and interior design and develops a broad approach to multi-disciplinary problem solving design solutions	Sustainability Related
Urban Ecology and Environmental Management	CITY 7460	City Planning	G	Theoretical frameworks and theories in urban ecology and environmental management as they apply to municipal institutional frameworks and the role of environmental planning in urban and regional government.	Sustainability Related
Water Resources Systems	CIVL 7090	Civil Engineering	G	The application of operations research/systems analysis techniques to water resources and urban and environmental systems	Sustainability Related
Advances in Water Treatment	CIVL 7200	Civil Engineering	G	Includes topics such as energy and the environment, solid waste management, and environmental problems in transport. Topics are studied through case histories of contemporary issues.	Sustainability Related
Solid Waste Composting and Disposal	CIVL 7210	Civil Engineering	G	Advanced engineering principles related to resource recovery and solid waste disposal. Biological conversion technologies and the disposal of solid wastes are discussed in detail.	Sustainability Related
Groundwater and Solute Transport Modelling	CIVL 7720	Civil Engineering	G	The physics and numerical solution of mathematical models of steady-state and transient groundwater flow and mass transport in the saturated and unsaturated zones; introduction to the finite difference and finite element methods; popular software; other modelling techniques, including random-walk particle methods; modelling groundwater contamination; non-linear problems; applications to regional groundwater flow and groundwater recharge, aquifer resource evaluations, contamination prediction	Sustainability Related
Pavement Evaluation and Performance	CIVL 7790	Civil Engineering	G	Pavement classification, pavement management, performance measures, condition surveys, sensor technology, material sampling, test methods on asphalt binders and unbound layers, non-destructive testing, sources of variability, pavement maintenance, rehabilitation, long-term performance.	Sustainability Related
Theory of Waste Treatment	CIVL 7930	Civil Engineering	G	Characteristics of waste-specific and generic determinations; unit operations and unit process for physical, chemical and biological treatment and transformation of particulate and dissolved contaminants. Biochemical transformations and degradation of hazardous pollutants; unit processes for enhanced nutrient removal and hazardous waste treatment. Full treatment trains for industrial and municipal waste treatment, including solids handling.	Sustainability Related
Environmental Engineering Laboratory	CIVL 7950	Civil Engineering	G	Laboratory work in water and wastewater analysis and treatment processes related to water quality management.	Sustainability Related

Current Concepts in Global Health: Populations, Policies & Procedures	CHSC 7200	Community Health Sciences	G	The course will focus on global patterns of mortality and morbidity, and the organization of health care services. Social, cultural, and economic issues will be related to health and health services.	Sustainability Related
Nations, Metis & Inuit Peoples	CHSC 7220	Sciences	G	about indigenous populations, and 'pre-Canada' world events influencing European colonization of this land with resultant	Sustainability Related
Epidemiology of Chronic (Non-Cancer) Diseases	CHSC 7270	Community Health Sciences	G	rationale and strategies for prevention. The methodological issues concerning the investigation of severe disease are also discussed.	Sustainability Related
Economic Evaluation of Health Care	CHSC 7290	Community Health Sciences	G	The objectives of this course are to enable students to understand economic evaluation methodologies (cost-effectiveness, cost-benefit, cost-utility analysis) as applied to health care and to familiarize them with the applied literature on economic evaluation of health care.	Sustainability Related
Organization and Financing of the Canadian Health Care System	CHSC 7320	Community Health Sciences	G	Students will study the historical development and current structure of the Canadian health care system and relate its development to changes in social and political factors. The course provides an economic perspective on current policy issues in the organization, financing, and delivery of health care in Canada.	Sustainability Related
Cultural Perspective on Illness and Medical Practice	CHSC 7330	Community Health Sciences	G	The objective of this course is to make students aware of the ways in which disease, illness, and medical practice are socially and culturally mediated. The course will examine cultural influences on the experience and expression of illness and consider the medical practitioner's role in the development and provision of culturally responsive health care.	Sustainability Related
Environmental and Occupational Health	CHSC 7460	Community Health Sciences	G	The aim of the course is to acquaint the student with the role of the environment (general and specifically working) as the determinant of health. The content of the course will be presented in the form of lectures, seminars, and field visits. Students outside CHS require instructor permission.	Sustainability Related
Social Organization and Health	CHSC 7490	Community Health Sciences	G	An examination of trade, production, and finance, including the creation of multilateral trading blocs (e.g., APEC, EU, NAFTA) and international organizations (e.g. WTO, IMF, the World Bank) and their impact on social inequality, the welfare state, and the environment in developed and developing nations.	Sustainability Related
Core Concepts in Public Health	CHSC 7500	Community Health Sciences	G	Public Health is a multi-disciplinary field of inquiry and practice that addresses the social and biological dimensions of population health. This course represents part one (with CHSC 7502) that is designed to provide students with a breadth of exposure to core competencies and content areas important to public health practice. This course provides students with an introduction to the historical and current theoretical debates relating to the science and art of protecting, promoting and restoring the health of the population through organized societal activity, public health law and ethics. Students will also gain relevant introductions to inequities in health, Indigenous health, environmental and occupational health, knowledge translation, and so forth. Specific content for each part of the two courses will be structured in such a way to complement more advanced program offerings in these topic areas.	Sustainability Related
Problem Solving in Public Health	CHSC 7510	Community Health Sciences	G	This seminar based course focuses on current issues and topics in community health to advance skills of thinking critically and communicating clearly about practical solution to public health problems.	Sustainability Related
Principles of Epidemiology	CHSC 7520	Community Health Sciences	G	This course will introduce the basic concepts and methods of epidemiology, including the definition and measurement of health status and health determinants in populations, assessing health risks and inferring causation, and issues in the design and analysis of population health studies.	Sustainability Related
Applied Public Health Epidemiology	CHSC 7530	Community Health Sciences	G	This course builds on the Principles of Epidemiology course through an applied focus. It discusses the application of epidemiologic principles in applied public health practice including the investigation of outbreaks, disease surveillance and the basic concepts of social network analysis, vaccine epidemiology and mapping. Students will also gain an understanding of the principles of prevention in public health practice, the benefits of qualitative methods and the role of the laboratory in outbreak investigation. They will receive instruction on the use of software for database development, data entry, analysis and presentation of results.	Sustainability Related
Epidemiology of Cancer	CHSC 7560	Community Health Sciences	G	This course introduces the magnitudes, risk factors and prevention strategies of cancer. It focuses on current knowledge related to the etiology of cancer, medical interventions and potential for prevention.	Sustainability Related
Social Aspects of Aging	CHSC 7710	Community Health Sciences	G	This course is an advanced seminar designed to examine current social issues in aging. The course is organized around selected topics related to aging. Where possible, the Canadian experience will be compared to international trends and diversity will be highlighted. The first section is a review of the field of gerontology, ageism, demographic trends, theoretical perspectives and methods and the second section explores contemporary social issues. This course is a required course for the Graduate Specialization in Aging Certificate.	Sustainability Related
Health and Aging	CHSC 7720	Community Health Sciences	G	This course is an advanced seminar designed to examine health and health care issues in aging. Where possible, the Canadian (or Manitoban) experience will be highlighted. Key topics in the health domain will be covered, such as frailty, mental health and dementia. The provision of care for older adults will also be covered, focusing on both the formal care system, as well as informal care providers.	Sustainability Related
Global Disability Studies	DS 7040	Disability Studies	G	One key theme will be chosen for each year from the interests and availability of faculty. Topics could include women with disabilities, international dimensions of disability, disability policy and practice, disability organizing and other topics developed over time.	Sustainability Related
Evaluation of Public Policy and Programs	ECON 7150	Economics	G	This course will provide students with an advanced and critical understanding of the foundations and assumptions of modern program evaluation using cost-benefit, cost-effectiveness, public decision/choice theory and economic analysis. Case examples are drawn from government and non-government programs.	Sustainability Related

Health Economics and the Economic Determinants of Health	ECON 7300	Economics	G	Intensive study of advanced work in a selected field of economics. The course content may vary. Students can earn multiple credits for this course only when the topic subtitle is different.	Sustainability Related
Theory of International Trade	ECON 7630	Economics	G	Theories of trade flow; trade and income distribution; economic growth and changes in trade flows; instruments of trade intervention; international labour and capital movements; and economic integration	Sustainability Related
Advanced Labour Economics	ECON 7790	Economics	G	A review of the theoretical and empirical foundations of modern labour economics.	Sustainability Related
Educational Sociology	EDUA 7210	Education Admin, Fndns & Psych	G	An examination of the relationship between education and society, with particular attention to ethnicity, family, and socio-economic status and to the role of the school in the socialization process in the Canadian context.	Sustainability Related
Working with Family, School and Community Systems	EDUA 7712	Education Admin, Fndns & Psych	G	Examining the effective development and implementation of support teams in school settings to establish collaborative and respectful partnerships between families, schools, and specialists.	Sustainability Related
Evaluating Educational Programs	EDUA 7810	Education Admin, Fndns & Psych	G	An introduction to current approaches to evaluating educational programs. A review of various evaluation methods/approaches, along with consideration of specific design, ethical, consulting and political issues will be the main focus of this course. Specific skills to be developed are the implementation of educational evaluations, data collection and analysis, and final report writing.	Sustainability Related
Culture, Citizenship and Curriculum	EDUB 7270	Education Curric, Tchg & Lrng	G	An examination of the role of school curricula in preserving, transmitting and transforming conceptions and practices of culture and citizenship, with particular reference to social and political education in schools.	Sustainability Related
Seminar in Environmental Education	EDUB 7990	Education Curric, Tchg & Lrng	G	Designed for students wishing to concentrate on science teaching and learning within the context of environmental education. Existing and projected programs and approaches to environmental education will be subjected to critical analysis.	Sustainability Related
Distributed Energy Generation	ECE 7880	Electr and Computer Engin	G	Rationale for distributed generations (DG); Distributed electricity generation technologies (thermal and renewable); Availability of renewable energy resources; Technical and economic evaluation of DG projects; DG grid integration issues and interconnection standards; Microgrids.	Sustainability Related
(Part A)	ENG 7010	Engineering	G	directions of the process from technical, social and environmental points of view.	Sustainability Related
Advanced Physiological Ecology of Insects	ENTM 7240	Entomology	G	The effect of environmental factors such as temperature, moisture, light and other organisms on the physiology and ecology of insects.	Sustainability Related
Family Violence	FMLY 7800	Family Social Sciences	G	Advanced study of current topics in family violence over the life course. Topics may include child abuse, sibling abuse, parent abuse, courtship violence, partner violence, and elder abuse. Emphasis is on understanding and critiquing current theory and research.	Sustainability Related
Food Science of Cereal Grains	FOOD 7180	Food Sciences	G	The course deals with cereal grains used for human food, the structure of constituents, and the relationship of constituent structure to functionality in the processing of the grains into food products. Emphasis will be on constituents and properties that contribute to optimum processing of wheat.	Sustainability Related
Biofilms and Food Safety	FOOD 7240	Food Sciences	G	An in-depth study of selected topics of current relevance in Food Science related to biofilms and food safety. Available to students in the M.Sc. programs and in the Interdepartmental Ph.D. in Food and Nutritional Sciences.	Sustainability Related
Contemporary Research Topics in Entrepreneurship	GMGT 7060	General Management	G	Supervised readings in one of the areas of business administration including human resource management, industrial relations, organizational behaviour, policy and environment.	Sustainability Related
Strategy	GMGT 7210	General Management	G	Students will integrate and apply concepts from various functional areas in analyzing organizational resources and capabilities, and environmental opportunities and threats. Students will study evolving strategic management problems and practices, and examine issues of formulation and implementation.	Sustainability Related
Cross-disciplinary Approach to Social Issues	GMGT 7530	General Management	G	An examination of current issues in areas which could, for example, include: organizational behaviour, organizational theory, strategy, human resource management, sustainability, social issues and industrial relations.	Sustainability Related
Characterization	GEOG 7010	Geography	G	characterization.	Sustainability Related
Aviation Geographies	GEOG 7010	Geography	G	Advanced study of a selected topic from any one of the department's fields of specialization such as aviation geographies.	Sustainability Related
Physical Oceanography of High Latitude Oceans	GEOG 7010	Geography	G	Advanced study of a selected topic from any one of the department's fields of specialization such as physical oceanography of high latitude oceans.	Sustainability Related
Aquatic Chemistry	GEOG 7010	Geography	G	Advanced study of a selected topic from any one of the department's fields of specialization such as aquatic chemistry.	Sustainability Related
Hydrologic Optics	GEOG 7010	Geography	G	Advanced study of a selected topic from any one of the department's fields of specialization such as hydrologic optics.	Sustainability Related
Climate Change	GEOG 7440	Geography	G	The course will provide an overview of General Circulation Models (GCMs) and how these models are used to study various aspects of global climate change. More specifically the course will deal with the coupling between the atmosphere, hydrosphere, lithosphere and biosphere from the perspective of Earth System Science.	Sustainability Related
Biogeography	GEOG 7500	Geography	G	The course will emphasize principles and approaches to understanding biogeography on a worldwide scale with specific examples from Canadian and Manitoban research. Topics discussed include the physical environment and biological interactions, effects of disturbance and climate change, the geography of biological diversity, evolution and extinction.	Sustainability Related
Storms-Mesoscale	GEOG 7780	Geography	G	This course focuses on a range of storms, and mesoscale phenomena in the summer and winter. These include thunderstorms, tornadoes, squall lines, lightning, low level jets, gust fronts, blizzards, freezing rain, orographic storm, and polar lows. The emphasis is on the physical mechanisms leading to these events and it also examines how they may change in our warming climate. This	Sustainability Related

Oceanography: Chemical	GEOG 7930	Geography	G	This course deals with the sources, distribution, and transformation of chemical constituents of the oceans, and the processes that control them. The emphasis will be given to biologically or climatically significant elements such as carbon, nitrogen, phosphorus, iron and mercury in the Arctic Ocean.	Sustainability Related
Sea Ice in Arctic Marine System	GEOG 7940	Geography	G	This course will provide a general background on the importance and current knowledge of sea ice with a focus on the Arctic marine system. The material will be provided in a highly disciplinary manner, touching on fields of geophysics, physical geography, biology and chemistry.	Sustainability Related
Environmental Geophysics	GEOG 7820	Geological Sciences	G	Examination of the application of geophysics to environmental targets. Topics will vary according to student interest and may include aspects of new-surface geophysics, engineering geophysics, geophysics of global climate change and geophysical risk assessment.	Sustainability Related
History of Aboriginal Rights	HIST 7760	History	G	A study of Aboriginal rights from early contact to the present with a particular emphasis on treaties, the courts, and Aboriginal efforts to enforce specific forms of rights.	Sustainability Related
Food and Nutrition in North American History	HIST 7774	History	G	The content of this course will vary. It will be an advanced, independent reading/study course for graduate students, on a topic of particular interest to the student. Normally the topic will be one that the student cannot study in an existing seminar course. The course content may vary. Students can earn multiple credits for this course only when the topic subtitle is different.	Sustainability Related
Food, Health and Nutrition in Twentieth Century Canada	HIST 7774	History	G	The content of this course will vary. It will be an advanced, independent reading/study course for graduate students, on a topic of particular interest to the student. Normally the topic will be one that the student cannot study in an existing seminar course. The course content may vary. Students can earn multiple credits for this course only when the topic subtitle is different.	Sustainability Related
Current Topics in Food and Nutrition Security	HNSC 7110	Human Nutritional Sciences	G	Studies of selected problems and programs in community nutrition emphasizing program planning and evaluation.	Sustainability Related
Landscape Architecture Studio 1	LARC 7110	Landscape Architecture	G	An introductory study of structure and order within nature and the built environment. Instruction in the principles of design, the basic elements of graphic and spatial composition, and the vocabulary and methods of approach to landscape architectural design within a variety of contexts. The course may include an obligatory pre-term drawing workshop and a field studies trip; location and cost to be determined on a yearly basis.	Sustainability Related
Consumer Insights and Social Change	MKT 7080	Marketing	G	A study of selected areas of recent development in the field of marketing. Topics may include the marketing of services, market research, business to business marketing, marketing channel systems, personal selling or sales management, and physical distribution.	Sustainability Related
Cultural Brand Management	MRK 7080	Marketing	G	A study of selected areas of recent development in the field of marketing. Topics may include the marketing of services, market research, business to business marketing, marketing channel systems, personal selling or sales management, and physical distribution.	Sustainability Related
Renewable Energy	MECG 7470	Mech. Engineering Graduate	G	A continuation of certain topics of MCEG 7460 to include the most recent advances in the area of renewable energy.	Sustainability Related
Environmental Microbiology	MBIO 7050	Microbiology	G	Topics and current developments in the field of environmental microbiology will be covered. A combined lecture, discussion, assignment and seminar format may be used. Inquire at the department for availability.	Sustainability Related
Seminar in Indigenous Economic Resilience	NATV 7290	Native Studies	G	This seminar deals with a variety of specific topics in Aboriginal Economy. The course content may vary. Students can earn multiple credits for this course only when the topic subtitle is different.	Sustainability Related
Critical Theory and Native Studies	NATV 7310	Native Studies	G	This course will assess the relevance of the concepts produced by recent social theory to the situation of Aboriginal peoples and the contribution made by "fourth world" contexts to social theory. Marxism, feminism, post-structuralism, post-colonial theory, and cultural theory will be among the perspectives examined.	Sustainability Related
Human Dimensions of Natural Resources and Environmental Management	NRI 7222	Natural Resource Management	G	The human dimensions of Natural Resources and Environmental Management will be considered through the following thematic units: definitions, history, and paradigms of management; intersection of science with politics, actors, groups and participatory processes; Traditional Ecological Knowledge (TEK), communications and environmental perception; institutions, common theory and adaptive co-management.	Sustainability Related
Resource and Environmental Management Policy	NRI 7242	Natural Resource Management	G	The complexity of natural resources and environmental policy formulation, implementation, and analysis is the primary focus. Specific topics include: modern state, government and policy development processes; policy community and stakeholders, and role of pressure and interest groups; policy analysis, research and evaluation are examined from a variety of perspectives. Theory and practice are linked in addressing course objectives	Sustainability Related
Environmental Risk and Hazards	NRI 7320	Natural Resource Management	G	Environmental risk and hazards are viewed in terms of complex processes of natural systems and social formation. Analysis of processes and events is assisted by theoretical formulation, development of models and examination of site- or type-specific empirical cases.	Sustainability Related
Study Design and Quantitative Methods for Resource and Environmental Management	NRI 7350	Natural Resource Management	G	This course addresses the quantitative analysis of environmental and natural resources data, emphasizing strong study design to prevent analytical difficulties. Focus is on preparing graduate students in environmental and resources management for dealing with the typical characteristics of environmental data, and for analyses specific to resources data.	Sustainability Related
Qualitative Field Methods for Community-based Resource and Environmental Management	NRI 7360	Natural Resource Management	G	The purpose of this course is to provide students with the knowledge and skills necessary to undertake qualitative research relevant to CBRM. The course will be offered in a studio format with an emphasis on student participation in a research team and the practical application of data collection procedures in field setting.	Sustainability Related

Fundamentals of Occupational Therapy Theory	OT 6110	Occupational Therapy	G	Students study the foundational values and beliefs of occupational therapy, the fundamentals of occupational therapy theory, and the relationship between occupation, health and well-being. Processes and approaches that guide practice with clients of various ages and in a variety of settings are introduced.	Sustainability Related
Health and Disability	OT 6120	Occupational Therapy	G	Students study definitions of health, factors influencing health, and systems that relate to health in populations. Students are also introduced to classification of diseases and disorders and impairments and the disablement process.	Sustainability Related
Foundations of Health and Well-being	OT 6122	Occupational Therapy	G	This course explores foundational knowledge in topics essential for understanding the concepts of and influences on health and well-being. Students engage in theory based and practical activities to understand models of disability, concepts of health, social determinants of health, cultural competence and safety, power and privilege. Course evaluated on a pass/fail basis.	Sustainability Related
The Environment and Occupational Performance	OT 6310	Occupational Therapy	G	An examination of physical, social, cultural and institutional aspects of the environment and their relationship to occupational performance throughout the life span. Students will begin to identify the environment in terms of enablers and obstacles to function for individuals with variable capacities.	Sustainability Related
Health Conditions and Occupational Performance	OT 6320	Occupational Therapy	G	An introduction to diseases, disorders and impairments as barriers to human occupational performance including an introduction to occupational therapy management approaches to enabling function.	Sustainability Related
Interpersonal Communication, Problem-Solving, and Trust-Building	PEAC 7010	Peace and Conflict Studies	G	Examines the role of language and communication in conflict and conflict resolution. These theoretical and practice perspectives are fundamental to the field of conflict analysis and resolution/peace studies. The role of power, gender, and culture in communication and conflict are reviewed. Theories and practical skills for successful communication, collaborative problem-solving, and trust-building are explored. This class is relevant for addressing conflicts within diverse settings.	Sustainability Related
Theories of Conflict and Conflict Resolution	PEAC 7020	Peace and Conflict Studies	G	Provides an overview of the theoretical foundations of the interdisciplinary field of conflict analysis and resolution, examining macro and micro theories regarding the causes of conflicts and approaches to their resolution. Conflicts are complex and take shape on multiple, interlocking planes. The course focuses on theory and the implications of these theories for practice.	Sustainability Related
International Conflict Resolution and Peace-building	PEAC 7030	Peace and Conflict Studies	G	Examines international conflict resolution and post-accord peace-building. Theories regarding the causes of international conflict are reviewed. Approaches for just and enduring resolution to international conflicts, building peace, and the promotion of a global civil society are explored.	Sustainability Related
Intercultural Conflict Resolution and Peace-Building	PEAC 7050	Peace and Conflict Studies	G	Examines the role of socially constructed identities and meaning in intergroup conflicts in a variety of contexts. Culture is broadly conceived to encompass a variety of identities, including differences along racial, ethnic, religious, gender, and class lines. Various models for resolution are reviewed. The nature of and ethics of intervention in cultures other than one's own are explored.	Sustainability Related
Gender, Conflict, and Peacemaking	PEAC 7060	Peace and Conflict Studies	G	Examines the role of gender in conflict and peacemaking in areas of armed conflict. Women tend to be impacted and respond to conflict in ways different from men. The course explores the theoretical and practical contributions women activists, peace researchers and educators have made toward understanding the role of gender.	Sustainability Related
Gender, Conflict and Peacemaking	PEACE 1224	Peace and Conflict Studies	G	Examines the role of gender in conflict and peacemaking in areas of armed conflict. Women tend to be impacted and respond to conflict in ways different from men. The course explores the theoretical and practical contributions of women activists, peace researchers and educators have made toward understanding the role of gender	Sustainability Related
Ethnic Conflict Analysis and Resolution	PEAC 7126	Peace and Conflict Studies	G	Examines theories of ethnic conflict and the intervention methods used by states, international organizations and conflict resolution and peace practitioners to analyze, manage and resolve ethnic conflicts. Case studies are used to explain conflict analysis and resolution and peacebuilding.	Sustainability Related
Indigenous World Views and Approaches to Peacebuilding	PEAC 7240	Peace and Conflict Studies	G	Examines indigenous models of peacebuilding from community level to national level. Emphasis is placed on restorative processes fundamental to cohesive relationships with others. This is achieved through ceremony, empathy, compassion, conflict resolution and restoration part of the peacebuilding models of indigenous peoples.	Sustainability Related
Peace Education	PEAC 7260	Peace and Conflict Studies	G	Examines the role of peace education as students seek to make sense of complicated and perilous events in their society. The course provides students with a background in the area of social justice, peace studies and conflict resolution.	Sustainability Related
Practicum	PEAC 7500	Peace and Conflict Studies	G	Students develop awareness of theoretical knowledge, practice skills and abilities necessary for intervention in community, group and organizational conflicts at a practicum site. Students integrate theory and experiential learning into practice to analyze the conflict, during the intervention, and post intervention reflection.	Sustainability Related
Plant Growth and Development Impacts on Herbaceous Perennial Forage Quality, Biomass &/ or Seed Prod	PLNT 7120	Plant Science	G	Reading or assignment or research on specific aspects of crop development, crop production, weed science, plant pathology, plant biochemistry or plant physiology.	Sustainability Related
Plant Genomics	PLNT 7162	Plant Science	G	Detailed analysis of advanced genomic techniques, experimental approaches, and progress in current plant genomic projects.	Sustainability Related
Advanced Plant Breeding	PLNT 7170	Plant Science	G	Advanced training in modern methods of plant breeding.	Sustainability Related
Advanced Weed Science	PLNT 7340	Plant Science	G	Weed biology and ecology in the context of weed management, covering theory, current information, investigative approaches and experimental techniques. Topics explored include: weed population biology, modelling, weed community ecology, herbicide efficacy and herbicide resistant weeds.	Sustainability Related

Epidemiology of Plant Disease	PLNT 7480	Plant Science	G	Lectures, seminars and discussions relating epidemiological principles to plant disease development and control. The course examines in-depth the interrelationships of host, pathogen and environment. Measurement of epidemiological parameters is stressed in relation to disease assessment, disease forecasting and disease management.	Sustainability Related
Quantitative Genetics and Plant Breeding	PLNT 7670	Plant Science	G	The theoretical basis of quantitative genetic variation. The genetic structure of plant breeding populations. Estimation, interpretation and use of genetic parameters in cross-pollinated and self-pollinated plant species. Variance components, genotype x environment interaction, inbreeding, heterosis, selection, heritability and combining ability.	Sustainability Related
Child/Youth Psychopathology	PSYC 7080	Psychology	G	Examines mental health conditions, covering a range of internalizing and externalizing disorders in children and youth. Biopsychosocial and ecological models, risk and resiliency, and developmental and cultural issues are examined. Structured and semi-structured diagnostic interviews are reviewed.	Sustainability Related
Program Evaluation and Consultation	PSYC 8110	Psychology	G	An overview of program evaluation and consultation as major areas of applied psychological practice; analysis of contemporary social and health problems; development, implementation, and evaluation of human service programs; understanding human service organizations; the role of consultant and common types of consultation; ethical issues in program evaluation and consultation.	Sustainability Related
Social Work Practice Seminar (Part A)	SWRK 6020	Social Work	G	Introduces students to ecological and other generalist practice models in the provision of social services. Attention is given to key contextual aspects of social work practice such as gender, poverty, and culture in the study of professional roles and ethics. Intervention modalities considered range from direct practice with individuals to strategies of community change.	Sustainability Related
Application & Critique of Theory & Research in SW with Individuals & Families (Part A)	SWRK 7640	Social Work	G	Using supervised practice experiences, this course develops advanced skills for assessment, intervention, and evaluation of direct practice with individuals and families within the context of social work's commitment to addressing social injustice. The course will extend over two terms.	Sustainability Related
Grounding Our Foundation in Indigenous knowledges and Social Work	SWRK 7700	Social Work	G	This course provides a general overview of Indigenous approaches to healing and helping. Connections to social work practice/policy are identified. The course is focused on experiential and participatory learning and involves a 5-day intensive retreat. Students will be graded on a pass/fail basis.	Sustainability Related
Remembering Our Histories – Setting Our Knowledges	SWRK 7710	Social Work	G	This course will set a foundation for understanding historical perspectives of Indigenous knowledges in relation to social work. Raise awareness of traditional and spiritual; connections to languages, families, communities, nations, and lands to establish an understanding of "relationship" in Indigenous ways of being. Students will be graded on a pass/fail basis.	Sustainability Related
Critical Theory and Indigenous Peoples	SWRK 7720	Social Work	G	This course will review critical social theories with primary focus on colonialism and social justice, in relation to social work. Anti-colonialism, anti-oppressive approaches, feminist approaches and other critical perspectives, in relation to Indigenous Peoples, will be examined from Indigenous perspectives.	Sustainability Related
Indigenous Research Methodologies and Knowledge Development	SWRK 7730	Social Work	G	This course will examine research epistemologies and methodologies based in Indigenous ontologies and social experiences in the context of social work research with Indigenous Peoples. The course will present the influences of colonization, Indigenism, and decolonization on knowledge development.	Sustainability Related
Indigenous Peoples, Identity, and Social Work	SWRK 7740	Social Work	G	This course will give students an understanding of how they see themselves and how their relationships at individual, family, clan, community, and nation levels contribute to identity development. It deepens understanding of how people view themselves and react in contemporary contexts. Students will be graded on a pass/fail basis.	Sustainability Related
Indigeneity, Power, Privilege, and Social Work	SWRK 7750	Social Work	G	This course will examine identity development influenced by gender, ethnicity, Indigeneity, internalized oppression, aboriginalism, internalized domination, whiteness, white privilege, racism, and in relation to social policies and social work practice with individuals, families, communities, and nations.	Sustainability Related
Indigenism	SWRK 7800	Social Work	G	This course will focus on Indigenous knowledges shared through group participation in Indigenous helping practices. It looks at how these practices could be supported by social workers in communities and organizations for people facing social challenges. Students will be graded on a pass/fail basis.	Sustainability Related
Perspectives on Knowledge for Social Work	SWRK 8010	Social Work	G	A seminar focusing on the definition, development, legitimization, and transmission of knowledge for social work practice. A range of approaches will be discussed including scientific approaches (logical positivism), post-modern approaches, indigenous and culturally based approaches, and critical approaches.	Sustainability Related
Social Work Past and Present: Trends, Institutions and Practices	SWRK 8100	Social Work	G	Development of Social Work in Canada, with international comparisons, through examination of social processes and intellectual trends shaping the profession, such as colonization, Indigenous issues, feminism, neoliberalism and globalization, and highlighting of practices, methods and models.	Sustainability Related
Seminar in Sociology of Religion	SOC 7110	Sociology	G	A comparative and analytical study of religion with particular reference to such areas as integration, change, ideology, value orientation, normative structures, social class, intergroup relations, personality systems.	Sustainability Related
Seminar in Sociology of Education	SOC 7120	Sociology	G	An analytical treatment of the influence of education, as a basic social institution, on society its functions in socialization, change, control, social mobility, social	Sustainability Related
Seminar in Intergroup Relations	SOC 7310	Sociology	G	This seminar will provide an opportunity for detailed study of intergroup (religious, racial, and ethnic) relations in contemporary Canadian society. The course content may vary. Students can earn multiple credits for this course only when the topic subtitle is different.	Sustainability Related
Globalization	SOC 7490	Sociology	G	A sociological examination of the globalization of trade, production and finance, including the creation of multilateral trading blocs (e.g., APEC, EU, NAFTA) and international organizations (e.g., WTO, IMF, the World Bank) and their impact upon social inequality, the welfare state and the environment in developed and developing nations	Sustainability Related

Agricultural Micrometeorology	SOIL 7170	Soil Science	G	Discussion of mass and energy transport in the boundary layer, evaporation and transpiration of water, light absorption and transmission of carbon dioxide in plant canopies and climate change impacts on micrometeorological processes.	Sustainability Related
Advanced Soil Ecology	SOIL 7270	Soil Science	G	Examine the role of soil organisms and their communities in decomposition, elemental cycling, and pathogen/pest suppression in managed and natural soil systems. Understand methods of studying biochemical activity and communities in soil. Take a specific research topic of choice and develop an understanding of the organisms and communities, environmental controls of key biological processes involved and apply your knowledge to resolving a specific research issue.	Sustainability Related
Masculinities	WOMN 7270	Women's and Gender Studies	G	Advanced study of selected topics in Women's Studies from an interdisciplinary perspective. The content of the course may vary from year to year and will be arranged by the coordinator of the Women's and Gender Studies Program in consultation with the appropriate representatives of departments. Interdisciplinary analysis of contemporary issues, debates and theories in Women's Studies. Topics will vary from year to year and may include, for example, gender theory, sexualities, or feminist pedagogy. The course content may vary. Students can earn multiple credits for this course only when the topic subtitle is different.	Sustainability Related
Theory of Water Treatment	CIVL 7920	Civil Engineering	G	Physical and chemical characteristics of water; water treatment processes including coagulation/flocculation, sedimentation, filtration, softening, adsorption, ion exchange, disinfection, and membrane processes.	Sustainability Related
Techniques in Climatology	GEOG 7470	Geography	G	This course overviews the theoretical basis that underpins the measurement and application of climate elements in micrometeorological and microclimatological research	Sustainability Related
Introduction to Agribusiness Management	ABIZ 1000	AgBusiness and AgEconomics	UG	Introduction to management principles applied to agribusiness. Topics covered will include cooperative and corporate organizations, financial analysis, marketing and planning. All students will prepare a business plan. Students will use spreadsheet skills with respect to processing information and preparing forecasts.	Sustainability Related
Transportation Principles	ABIZ 2210	AgBusiness and AgEconomics	UG	This course is a study of demand forecasting, cost analysis, regulation of carriers, the role of transport in economic development and transport planning addressing the agriculture and agri-food and other supply chains. The course provides an international/global orientation to logistics and supply chain management.	Sustainability Related
Introduction to Agricultural and Food Marketing	ABIZ 2510	AgBusiness and AgEconomics	UG	Understand fundamentals of food and agriculture markets Understand basic economics of supply & demand that determine price in these markets. Understand how prices are discovered and key approaches to price risk management. Understand key features of supply chains from farm production of agricultural commodities to food consumption of differentiated food products.	Sustainability Related
Agricultural Human Resource Management	ABIZ 2620	AgBusiness and AgEconomics	UG	Students will carry out processes such as job analysis and design, recruitment and selection, training and development, performance management and compensation management to develop a comprehensive human resource management plan for an agricultural enterprise. An overview of human resource legislation will be provided and resources to support human resource management decision making will be identified.	Sustainability Related
Natural Resources and Primary Agricultural Production	AGRI 1500	Agriculture	UG	Introduces students to natural resources and climate, primary production of crops and livestock, production and resource economics and rural society. A model of the entire agri-food system will be used to show interrelationships among disciplines, processes, etc.	Sustainability Related
Production, Distribution and Utilization of Agricultural Products	AGRI 1510	Agriculture	UG	Introduction to the aspects of agriculture that follow primary production and includes confined animal production and a presentation of a model of the entire agrifood system. Special emphasis on processing, marketing, transportation and food safety. Laboratory sessions will use small groups to examine problem based case studies.	Sustainability Related
Introduction to Agrifood Systems	AGRI 1600	Agriculture	UG	This course explores agricultural production systems with special focus on the Canadian Prairies. Students will develop scholarly, social, communication and professional skills that will enable them to be successful in the application of technical knowledge to food production challenges. This course will include a field trip component.	Sustainability Related
Introductory Toxicology	AGRI 2180	Agriculture	UG	A survey of general principles underlying the effects of toxic substances on biological systems, including history, scope and applications of toxicology, the mechanisms of toxic action, and some major types of toxicants.	Sustainability Related
Indigenous Issues in Food Systems	AGRI 2300	Agriculture	UG	An overview of the historical and contemporary relationships between food systems and Indigenous people. The course will provide background to allow students to craft their own solutions to food system issues faced by Indigenous people.	Sustainability Related
Current Issues in Agriculture & Food	DAGR 0920	Agriculture Diploma	UG	The course will present current day and potential future issues facing Canada's agri-food sector. Students will be required to identify and optimize solutions to these issues, with a focus on the roles and responsibilities of farmers, other food producers and agri-food industry members. The impact of these issues on farms and the agri-food industry now and in the future will be emphasized as will the role farmers can play in in policy development in response to these issues. An opportunity for students to engage with several guest speakers from the agri-food community. There will be two or three full-day field trips.	Sustainability Related
Principle of Ecology	AGEC 2370	Agroecology	UG	Principles of ecology at the individual, population, community, and ecosystem levels.	Sustainability Related
Cultural Anthropology	ANTH 1220	Anthropology	UG	The comparative study of human societies and cultures, including language, economic and political organization, family and kinship, ritual and belief systems, cultural stability and change.	Sustainability Related
Culture, Society and Power	ANTH 2000	Anthropology	UG	An advanced introduction to cultural anthropology that focuses on anthropological approaches to the cross-cultural organization, dynamics, and tensions of social relationships at individual, group, and societal levels.	Sustainability Related
Langage and culture	ANTH 2011	Anthropology	UG	General consideration of the nature of language and of the interrelations between language and other aspects of culture. Socio-cultural correlations of linguistic variations. Ethnography of communication.	Sustainability Related

Relatedness in a Globalizing World	ANTH 2020	Anthropology	UG	Anthropological approaches to diverse practices of human relatedness across cultures and over time, including 21st century reconfigurations or marriage, family, reproduction and kinship.	Sustainability Related
European Archaeology	ANTH 2060	Anthropology	UG	This course will survey the archaeological record of Europe from the earliest human occupation through the rise of early cities and complex societies. Case studies will be used to examine the social, political, economic, and technological adaptations of early human societies in the region.	Sustainability Related
Plagues and People	ANTH 2240	Anthropology	UG	Examines selected plagues in evolutionary, ecological, and epidemiological context, and considers the complex biological, social, and economic repercussions for human populations. Foci include past, present, and emerging infectious disease epidemics.	Sustainability Related
Ecology, Technology and Society	ANTH 2430	Anthropology	UG	Ecological analysis of the interplay of socio-political and technological processes in different types of societies. Focus upon the ecological side-effects and selected technologies, economic mechanisms and political institutions	Sustainability Related
Anthropology of Mass Communication	ANTH 2470	Anthropology	UG	This course focuses on media production and dissemination and on images of the world created by media. Media practices and products are addressed in relation to the formation of social relations and identities, the shaping of peoples' sense of time and space, and media's role in the construction of communities and in processes of socio-economic and cultural change.	Sustainability Related
Culture, Environment, and Technology	ANTH 2500	Anthropology	UG	Study of ecological systems, focusing on processes of adaptation in societies differing in organization and in views of technology. Demographic and technological changes are examined in relation to cultural, political and ideological factors.	Sustainability Related
Anthropology of Illness	ANTH 2650	Anthropology	UG	Comparative study of cultural factors involved in health/illness: concepts of disease and curing practices.	Sustainability Related
Evolution and Human Diversity	ANTH 2860	Anthropology	UG	An introduction to the interacting roles of heredity, culture and environment in human families and populations. Introduces the biological bases for variation within/between human populations.	Sustainability Related
Anthropology of Food	ANTH 3200	Anthropology	UG	Considers the diversity of ways that anthropologists have used food as a productive entry point for understanding culture, society, and human ecology. The course will survey highpoints in the history of the anthropology of food and address current topics such as food security and food movements.	Sustainability Related
Anthropological Perspectives on Globalization and the World-System	ANTH 3750	Anthropology	UG	An anthropological perspective on the modern world-system and the expansion of capitalism into peripheral areas of the world; the transformation of indigenous societies and cultures; the rise of ethnic conflict, protest and resistance; and a comparative examination of selected global and transnational processes.	Sustainability Related
Biology: Biological Diversity and Interaction	BIOL 1010	Biological Sciences	UG	An introduction to biological diversity including prokaryotes, protists, fungi, plants and animals; the form and function of plants and animals and basic concepts of ecology. May not be used for credit in a Major or Honours program in the Biological Sciences	Sustainability Related
Economic Plants	BIOL 1300	Biological Sciences	UG	A survey of economically important plants and their products. The history of plant use, plants in folklore and medicine, fermentation and viticulture, domestication of plants, and forestry are the major topics covered. Chemical, structural and nutritional aspects of plant products are also discussed.	Sustainability Related
The State of the Earth's Environment: Contemporary Issues	BIOL 1340	Biological Sciences	UG	A presentation of contemporary environmental issues focusing on the scientific basis of problems caused by the growth of human population, use and depletion of resources, pollution, and damage to the environment. The current state of our knowledge bases will be discussed, along with improvements in them that may be necessary. The course will consider needs for action, priorities, and opportunities.	Sustainability Related
Introductory Toxicology	BIOL 2380	Biological Sciences	UG	A survey of general principles underlying the effects of toxic substances on biological systems, including consideration of the history, scope and applications of toxicology, the mechanisms of toxic action, and some major types of toxicants	Sustainability Related
Introductory Ecology	BIOL 2390	Biological Sciences	UG	The course involves a study of the interrelationships of living organisms (including human) with each other and with their environment.	Sustainability Related
Environmental Physiology of Animals 1	BIOL 3470	Biological Sciences	UG	This course is intended to acquaint students with some of the major environmental challenges encountered by animals and stresses the diversity of physiological solutions to these problems in aquatic and terrestrial organisms. Areas covered may include thermal biology, circulation, gas exchange and buoyancy regulation. Laboratories explore related subjects in various animals.	Sustainability Related
Precision Agriculture – Technological Tools for Decision Making	BIOE 0222	Biosystems Engineering	UG	Precision agriculture is a philosophy of agricultural management that has been enabled by modern technology. This course will examine both the technology and the techniques that can be used to improve the efficiency of agricultural operations by decreasing costs, increasing profits, and decreasing hazards to the environment. Students will be introduced to current and emerging technologies for crop, livestock and business management. Students will have the opportunity to apply data generated from these technologies to support decision making required by farm managers.	Sustainability Related
Farm Machinery	BIOE 0600	Biosystems Engineering	UG	Operating principles of basic farm implements with emphasis on seed cleaning, seeding, tillage, haying, and harvest machines including their selection, adjustment, efficiency, and cost of operation with respect to test data.	Sustainability Related
Agricultural Buildings and Environments	BIOE 0700	Biosystems Engineering	UG	Factors that impact the practicality of farm buildings. Components of buildings, including materials and construction techniques. Techniques of maintaining building environments to facilitate production and/or storage.	Sustainability Related
Materials Handling and Electrical Controls	BIOE 0710	Biosystems Engineering	UG	Fundamental concepts and systems approach to storing, conditioning, moving, processing, and metering of agricultural produce. Principles and practices of fans, grain drying, dust control, and electrical supply.	Sustainability Related
Transport Phenomena	BIOE 2110	Biosystems Engineering	UG	Principles of heat transfer, solar radiation, psychometrics, molecular diffusion, mass transfer and refrigeration and their application to biosystems	Sustainability Related

Biology for Engineers	BIOE 2590	Biosystems Engineering	UG	Provide theories and principles of Biology to engineering students and present applications of biological principles to engineering problems. Fundamental theories involved in cell structure and function, metabolism, genetics and heredity, bacteria and virus structure and function, plant and animal structure and function are covered. An introduction to animal and plant physiology is also provided. Laboratory sessions and term assignments focus on the engineering applications of these basic theories and principles to provide a good understanding of the role of Biology in Engineering	Sustainability Related
Plant and Animal Physiology for Engineers	BIOE 2600	Biosystems Engineering	UG	Plant and animal physiology as affected by environment for use in the design of agricultural machines, structures, and food processes for biological products; models of simulation of plant and animal growth.	Sustainability Related
Biosystems Engineering Design 1	BIOE 2900	Biosystems Engineering	UG	An introduction to the professional discipline of Biosystems Engineering and the philosophy of systems thinking that is used by the Biosystems engineer. Students will be introduced to several principles (i.e., safety engineering, human factors engineering and biomimicry) that should be considered during the design process, and will be given opportunity to apply these principles to design problems. The course will provide opportunity for students to develop technical communication, project management and teamwork skills.	Sustainability Related
Engineering Properties of Biological Materials	BIOE 3320	Biosystems Engineering	UG	Engineering properties of biological and interacting materials within the system. Relationship between composition, structure, and properties of plant, animal, and human tissues. Definition and measurement of mechanical, thermal, electromagnetic, chemical and biological properties and their variability. Use of these properties in engineering calculations	Sustainability Related
Catholicism and Ecology in Perspective	CATH 2000	Catholic Studies	UG	The subject matter of this course will vary from year to year, but it will deal with a special topic of current interest in the interdisciplinary program in Catholic Studies. The course content may vary.	Sustainability Related
Introduction to Microeconomic Principles	ECON 1010	Economics	UG	This course introduces students to the study of microeconomics. Topics include: demand and supply, price determination, market structure and resource allocation; the behaviour of consumers and firms; and market intervention by government. Selected economic topics are examined such as: welfare programs, environmental regulation, the economics of discrimination, pay equity, and taxation.	Sustainability Related
Introduction to Macroeconomic Principles	ECON 1020	Economics	UG	This course introduces students to the study of macroeconomics. Topics include: aggregate performance and policy; the determinants of national income, employment and the price level, the role of monetary and fiscal policies in stabilizing the economy and promoting economic growth.	Sustainability Related
Introduction to Global and Environmental Economic Issues and Policies	ECON 1220	Economics	UG	A survey of some major principles and policies characterizing the world economy and the environment.	Sustainability Related
Macroeconomic Theory 1	ECON 2020	Economics	UG	A study of classical macroeconomic models of the determination of economic aggregates such as national income, consumption, investment, government spending, exports, imports, and economy-wide variables such as the interest rate, the foreign exchange rate, the price level and inflation, and the unemployment rate. The influence of fiscal and monetary policies on the aggregate economy is examined.	Sustainability Related
Economics of Gender	ECON 2362	Economics	UG	This course will use both neo-classical and feminist economic theory to explore how gender differences may lead to different economic outcomes for men and women, both within families and in the marketplace. Topics covered may include gender aspects of production (both inside and outside the household), leisure, marriage and divorce, fertility, childcare, education, migration, aging and development.	Sustainability Related
Introduction to Environmental Economics	ECON 2390	Economics	UG	The economics of management of water, air and land resource quality, and the economics of conservation. The economic implications of environmental standards, licensing, criteria and pollution charges will be illustrated by current issues.	Sustainability Related
Political Economy 1: Production and Distribution	ECON 2540	Economics	UG	A study of the theories, institutions, policies and relations of power in national and global economic society with reference to the production of market and non-market goods and services and the distribution of necessary and surplus output. Particular attention will be given to the role of the state in the regulation of markets and the distribution of surplus.	Sustainability Related
Political Economy 2: Economic Growth and Fluctuations in a Global Economic Environment	ECON 2550	Economics	UG	A study of the theories, institutions, policies and relations of power in national and global economic society with reference to economic growth, international trade and finance, economic fluctuations, inflation and unemployment. Particular attention will be given to the role of the state in the regulations of macroeconomic activity.	Sustainability Related
An Introduction to the World's Economies	ECON 2630	Economics	UG	An examination of the world's economies from a broad-based economic perspective (including economic theories, institutional perspectives and historical evidence) to explain the development and limits of the world's changing and differing economies, and economic growth patterns in the light of the private business sector, labour relations and the role of the state.	Sustainability Related
Economics of Gender	ECON 2362	Economics	UG	This course will teach some of the basic ideas underlying gender economics. It is a survey course and will not delve too deeply into any one topic during lectures. Students are expected to explore a topic on their own over the term as they prepare material for submission.	Sustainability Related
Introduction to Environmental Economics	ECON 2390	Economics	UG	The objectives of this course are: (1) that you know more about climate change from an economist's perspective at the end of the course than you did at the beginning; (2) that you can list several market failures and use each to explain and/or analyze the issue of climate change and other environmental issues; (3) that you know about both the background to and current state of international climate change policy; and (4) that you are able to describe the basic mechanics of emission standards, emission taxes, and cap-and-trade systems and how these instruments could be recruited to address climate change.	Sustainability Related

Income Distribution	ECON 2610	Economics	UG	This course introduces students to how income, and its accumulation as wealth, is distributed between individuals, as well as between classes of economic actors. We will review how income inequality, wealth and poverty are measured, and broad trends that have emerged. We will examine the impact of redistributive policies undertaken by governments, and how various approaches to economic analysis address the causes of income inequality and the implications of redistribution.	Sustainability Related
Adult Learning and Development	EDUA 1560	Education Admin, Fndns & Psych	UG	A study of the extensive knowledge of lifespan development and its importance for adult education practitioners. With a focus on development, learning and change, emphasis is placed on the importance of context and individual differences in adult learning.	Sustainability Related
Foundation of Adult Education	EDUA 1570	Education Admin, Fndns & Psych	UG	An introduction to the field of Education from a local and global perspective. Attention will be given to historical movements in adult education, philosophical perspectives, participation and motivation, transformative perspectives on adult learning, and current and future perspectives on adult education.	Sustainability Related
The Role of School in Society	EDUA 2901	Education Admin, Fndns & Psych	UG	Study of the Canadian and Manitoba school system, in the context of a diverse society. This course aims, firstly, to raise awareness of the historical, philosophical, sociological and cross-cultural issues related to teaching. Secondly, it will lead students to understand the role of the teacher within the organization from a professional, legal and administrative point of view	Sustainability Related
Inclusive Education	EDUA 4000	Education Admin, Fndns & Psych	UG	An examination of concepts and issues related to meeting the diverse needs of all students, including methods and resources that respond to diversity in classrooms and schools.	Sustainability Related
Design in Engineering	ENG 1430	Engineering	UG	The creative process; the design process; working in a team. The engineering profession from the perspective of students and professionals. Academic, legal and ethical considerations.	Sustainability Related
Insect Pest Management	ENTM 0620	Entomology	UG	Characteristics, damage, and identification; insecticide use and safety; life histories and control of common Manitoba livestock, field and farmyard insects. General principles of pest management in agriculture will also be discussed.	Sustainability Related
World of Bugs	ENTM 1000	Entomology	UG	A survey of insect biology and life styles with emphasis on insect diversity and human-insect interactions.	Sustainability Related
Introductory Toxicology	ENVR 2180	Environment	UG	A survey of general principles underlying the effects of toxic substances on biological systems, including consideration of the history, scope and applications of toxicology, the mechanisms of toxic action, and some major types of toxicants.	Sustainability Related
Technical Communication in the Environmental Sectors	ENVR 2350	Environment	UG	An introduction to technical communication skills required for environmental practitioners in research, government, and industry. The course covers technical writing and literature search techniques, business writing including reports, memos and e-mails, professional presentation skills, and fundamental internet skills. Practical experience is gained through assignments and laboratory exercises.	Sustainability Related
Environmental Chemistry	ENVR 2550	Environment	UG	An introduction to the chemistry of the environment. Emphasis will be on the composition of the natural environment and the processes of natural and human-introduced chemical species that take place within it. The course will provide students with the chemical basis for understanding the environment and environmental problems.	Sustainability Related
Professional Development in the Environmental Sectors 1 (Part A)	ENVR 2990	Environment	UG	Through self directed learning students are introduced to the environmental sectors and issues including workplace health and safety, the respectful workplace, managing workloads and expectation, and professionalism. The course is a mandatory requirement to Cooperative Education Option admission.	Sustainability Related
Environment and Tourism	ENVR 3000	Environment	UG	Selected topics of current interest in the Environmental Sciences and Studies related to environmenta and tourism. Course content to vary with each offering depending on the needs and interests of students and faculty.	Sustainability Related
Earth: A User's Guide	EER 1000	Environment, Earth & Resources	UG	This course will present a multi-disciplinary introduction to the Planet Earth as both the source of essential resources and as the site of resulting negative impacts. Focus in the course will be provided by addressing important and current topics, case studies, and concepts that the well-educated citizen of the Earth should understand and will include natural and human-induced processes within a broad range of spatial and temporal scales.	Sustainability Related
Introduction to Environmental Design	EVDS 1600	Environmental Design	UG	An introduction to the philosophies, theories, practices, processes and methods that collectively compose the discipline of Environmental Design. The focus will be on the social, environmental, and technological issues that shape the built environment and on an examination of the challenges and roles facing environmental designers in the contemporary world.	Sustainability Related
Visual Literacy	EVDS 1602	Environmental Design	UG	This course examines the contemporary visual and spatial environment, its critical historical influences and emerging cultural issues. The structure of image and form, the foundations of spatial and visual knowledge and the importance of materiality as they pertain to Environmental Design will be advanced as well as disciplinary appropriate methods of communication.	Sustainability Related
History of Culture, Ideas and Environment	EVDS 1660	Environmental Design	UG	Historical survey of key works from the foundations of civilization to the Enlightenment, including interdisciplinary perspectives in art, architecture, interior design, landscape architecture and urban planning considered in the physical, socio-economic, political, artistic and cultural contexts.	Sustainability Related
History of Culture, Ideas and Environment 2	EVDS 1670	Environmental Design	UG	A historical survey of western movements in art, architecture, interior design, landscape architecture and urban planning considered within the physical, socio-economic, political, artistic and cultural context. An introduction to the historical influence of the art, design and culture of non-western traditions will be included. Emphasis is on works created after the Enlightenment.	Sustainability Related

Urban Media Lab	EVDS 2100	Environmental Design	UG	An introduction to visual methods of representation and related media including drawing, photography and video. The intention is to critically engage the urban and suburban contexts as a laboratory for investigating cultural values, aesthetic issues, design principles, and representational techniques.	Sustainability Related
Ecology and Design	EVDS 2200	Environmental Design	UG	An examination of principles of Ecology and Design works in which these tenets are considered, engaged, and/or demonstrated. Topics fundamental to the science of Ecology will structure the course content. Emphasis will be placed on understanding the forces and systems working within and between natural, social and human environments.	Sustainability Related
Design Studio 2	EVDS 2900	Environmental Design	UG	An exploration of the fundamental relationships between space, form and order in the context of the built environment, from body to place. Pedagogical emphasis will be directed towards design process, cultural intentions, and environmental accountability.	Sustainability Related
Families in Contemporary Canadian Society	FMLY 1000	Family Social Sciences	UG	This course provides an introduction to issues in contemporary families from an interdisciplinary perspective. Changing and diverse family forms and experiences are reviewed. An overview of issues pertinent to family well-being, including but not limited to immigration, poverty, homelessness, racism, addiction, disability, divorce, and physical and mental illness is provided.	Sustainability Related
Introduction to Social Development	FMLY 1012	Family Social Sciences	UG	This course is an introduction to Social Development with a particular emphasis on families and communities. Social development is concerned with the advancement of the common good, the effective management of social problems, the meeting of human needs, and the equitable distribution of society's resources. As such, this course explores the social factors and conditions that promote or hinder social development and how this affects the well-being of individual, families, and communities in contemporary societies.	Sustainability Related
Family Management Principles	FMLY 1420	Family Social Sciences	UG	An introductory course that uses an ecosystem perspective resources, decision-making, planning, implementing, evaluating, and communication within family contexts. Applications to balancing work and family, individual and family stress, family finance, environmental issues, and the use of time and human resources will be made.	Sustainability Related
Development, Conflict, and Displacement	FMLY 2012	Family Social Sciences	UG	The course is an introduction to development, conflict, and displacement as they affect individuals, families and communities. Specifically, this course examines the current phenomenon of induced displacement due to social conflicts, natural disasters, or uneven development in developing countries. Students will examine concepts and issues arising from induced displacement and explore community based responses to this problem.	Sustainability Related
Diversity and Families	FMLY 2500	Family Social Sciences	UG	Using the theoretical frameworks of intersectionality and social ecology, this class addresses how diversity in Canada is influenced by age, gender, ability, ethnicity, race, as well as family relationships, institutions and social policies. A focus on human rights and anti-racism education is emphasized.	Sustainability Related
Foundations of Childhood Developmental Health	FMLY 2600	Family Social Sciences	UG	This course examines the theoretical and empirical foundations of childhood development and their implications for promoting developmental health. Specifically, the course considers the biological and environmental factors that influence developmental health given physical, cognitive, emotional and social development from the prenatal period to middle childhood.	Sustainability Related
Family Violence	FMLY 2800	Family Social Sciences	UG	A survey of the extent and nature of various forms of family violence across the life course. Topics include physical and sexual child abuse, sibling violence, partner violence, and elder abuse. Emphasis is on prevalence, incidence, causes, consequences and solutions.	Sustainability Related
Food Safety Today and Tomorrow	FOOD 1000	Food Sciences	UG	A contemporary examination of the safety of the food supply - where, how and why problems may arise and what is and can be done to consistently achieve high quality, safe food. Controversial issues (residues, organic, biotechnology, irradiation) will be discussed in a balanced manner, and prospects for the future presented.	Sustainability Related
Introduction to Human Geography	GEOG 1280	Geography	UG	This course studies aspects of the human world: population, settlement and resources.	Sustainability Related
Introduction to Physical Geography	GEOG 1290	Geography	UG	This course studies aspects of our physical environment: climate, landforms, soils and vegetation.	Sustainability Related
Social Justice in the 21st Century: Global Political Economy and Environmental Change	GEOG 1700	Geography	UG	Introduces students to political economy and cultural geography through the close analysis of contemporary world events, including but not limited to instances of violent conflict, environmental change, international negotiations, political processes and events, social movements, and policy developments. A multimedia approach will advance students' understanding of geopolitical events from political economy and spatial perspectives. Specific content of the course will change year-by-year in response to developments in national and world politics.	Sustainability Related
Natural Hazards	GEOG 2272	Geography	UG	Environmental hazards to human settlement and economy are examined with particular attention to meteorological, soil erosion, mass wasting, earthquake and volcanic phenomena.	Sustainability Related
Atmospheric Thermodynamics, Clouds and Precipitation	GEOG 2300	Geography	UG	Critical thermodynamic processes are discussed that are associated with the Earth's atmosphere including dry and moist processes, phases of water, stability, cloud development and precipitation processes.	Sustainability Related
Introduction to Process Hydrology	GEOG 2310	Geography	UG	This course introduces students to the near-surface components of the hydrological cycle, including the processes of precipitation, evaporation, water-biosphere interactions, infiltration, overland and stream flow.	Sustainability Related
Place, Populations and Mobility: Geographic Perspectives	GEOG 2330	Geography	UG	An examination of the factors controlling the number and distribution of human population. Variations in fertility, mortality and mobility will be analyzed and the causes and consequences reviewed.	Sustainability Related
Geography of Tourism	GEOG 2372	Geography	UG	This course examines the social, economic and environmental dimensions of tourism and recreation. Historical and contemporary experiences from around the world will be studied.	Sustainability Related

Geography of Natural Resources	GEOG 2520	Geography	UG	An introduction to the basic concepts of the subject and the distribution of resources. Stress will be placed on Canadian resources and resource requirements but examples from other resource systems will also be used.	Sustainability Related
Weather and Climate	GEOG 2540	Geography	UG	This half-course examines the nature, controls, and observations of weather and the variation of climate in time and space.	Sustainability Related
Geography of Canada	GEOG 2570	Geography	UG	environment, settlement, culture, economic activity, and land use.	Sustainability Related
Geography of the United States	GEOG 2580	Geography	UG	patterns of their physical environment, settlement, culture, economic activity, and land use.	Sustainability Related
Geography of Culture and Environment	GEOG 2630	Geography	UG	An introduction to the cultural geographic study of environment, focusing on the evolution of landscape, the creation of regions, and human relationships with nature.	Sustainability Related
Introduction to Arctic System Science	GEOG 2700	Geography	UG	This course introduces students to the various components of the Arctic system, including the terrestrial and marine environments, polar atmosphere, biological and chemical oceanography.	Sustainability Related
Geography of Canadian Prairie Landscapes	GEOG 2900	Geography	UG	This course introduces students to the various geographical themes, concepts and processes within the context of the natural and anthropogenic development of the Canadian prairie region. It traces the evolution of the prairie landscape. It will focus on academic writing in the discipline.	Sustainability Related
Introduction to Oceanography	GEOG 2930	Geography	UG	This course provides an introduction to the physical, chemical, biological and geological processes in the world oceans and their interactions with the overall Earth system. This course is interdisciplinary, applying geological, chemical and biological processes to the study of the world's oceans.	Sustainability Related
Social Vulnerability to Natural Hazards	GEOG 3272	Geography	UG	This course examines differing social vulnerability to natural hazards, before, during and after disasters, including class, gender, age, health, language, and ethnicity.	Sustainability Related
Atmospheric Dynamics, Storms and Radar	GEOG 3310	Geography	UG	The course covers the critical dynamic processes that are associated with the Earth's atmosphere including forces that control wind, the kinematics of the wind field, general circulation, hodographs, thermal wind, laws of motion, mid-latitude circulations, convective storms and the utility of weather radar.	Sustainability Related
The Dynamic Earth	GEOL 1340	Geological Sciences	UG	An introduction to dynamics of the Earth's interior and surface that created the environment in which life evolved and that continue to change the world in which people now live.	Sustainability Related
Natural Disasters and Global Change	GEOL 1410	Geological Sciences	UG	Discover how and when natural disasters occur, and how to identify and recognize them. Explore the Earth processes that lead to natural disasters and global change.	Sustainability Related
Environmental Geology	GEOG 2390	Geological Sciences	UG	Examination of geological processes and material as they interact with human activities, environmental planning, and management.	Sustainability Related
Energy and Mineral Resources	GEOG 2570	Geological Sciences	UG	An introduction to the geological factors and processes responsible for the origin, concentration and distribution of fuels, geothermal resources, metallic and nonmetallic minerals.	Sustainability Related
My Friend the Tree: Ecology and Environment in German Culture in English Translation	GRMN 2500	German	UG	Topics dealing with German literature and culture. Course content will vary from term to term depending on the interests and needs of students and staff. The course content may vary - example Ecology and Environment in German Culture	Sustainability Related
Social Justice in the 21st Century: Global Political Economy and Environmental Change	GPE 1700	Global Political Economy	UG	Introduces students to political economy and cultural geography through the close analysis of contemporary world events, including but not limited to instances of violent conflict, environmental change, international negotiations, political processes and events, social movements, and policy developments. A multimedia approach will advance students' understanding of geopolitical events from political economy and spatial perspectives. Specific content of the course will change year-by-year in response to developments in national and world politics.	Sustainability Related
Perspectives on Global Political Economy	GPE 2700	Global Political Economy	UG	An interdisciplinary seminar exploring issues in political economy at the global level from the perspectives of Anthropology, History, Economics, Political Studies, and Sociology.	Sustainability Related
Health and Health Professions	HEAL 1600	Health Studies	UG	Students discuss the Inter-relationship between health, health determinants, and the impact that sciences, health-science, behavioural-social sciences, and technology, have on health care and the health professions. Participants will consider their own role as health care consumers.	Sustainability Related
History of Human Rights and Social Justice in the Modern World	HIST 2400	History	UG	Introductory course examining the emergence of the modern human rights era and social justice movements globally. Possible topics of study: human rights as global norm; non-Western conceptions of rights; workplace rights; indigenous rights; women's and gender rights.	Sustainability Related
Nutrition for Health Professionals	HNSC 2170	Human Nutritional Sciences	UG	An examination of the fundamentals of nutrition and the relationship between nutrition and health within the context of the health professions. The focus is on nutritional strategies used to promote health and in the treatment of common health conditions.	Sustainability Related
Human Resource Management	HRIR 2440	Human Res. Mgmt/Indus Relat.	UG	Introduction to principles and procedures in the management of human resources. Topics include diversity management, conflict resolution, employment, law, planning, job analysis, performance appraisal, staffing, compensation, union-management relations, and current issues.	Sustainability Related
International Management	INTB 2200	International Business	UG	Analysis of the practice of management in an international setting. Examines the cultural, political, and economic environments which influence managerial decision-making in an international context.	Sustainability Related
Health and Physical Aspects of Aging	KIN 2610	Kinesiology	UG	An introduction to health, well-being and aging. Emphasis on health as multidimensional including physical, social and mental health. Integration of theory and research in examining selected issues related to health and physical aspects of aging.	Sustainability Related

Working for a Living	LABR 1260	Labour Studies	UG	An introduction to the study of working lives in the contemporary world and the global transformation that has made working for wages central to human existence.	Sustainability Related
The Political Economy of Labour	LABR 2100	Labour Studies	UG	This course examines the dynamics of work organization, the production and reproduction of labour power, labour markets and class conflict in capitalist societies, with attention to contemporary Canada.	Sustainability Related
Workers, Employers and the State	LABR 2300	Labour Studies	UG	This course examines the social, economic and political contexts of work and the relations, rules and structures that shape the interactions between workers, employers and the state. Topics include workers' and management rights, the rights, obligations and functions of unions, the legal contexts of labour/management relations, and initiatives for increasing equity.	Sustainability Related
Microbiology I	MBIO 1010	Microbiology	UG	Topics will include the definition and history of microbiology, concepts of practical microbiology, prokaryotic cell structure, prokaryotic specialization in gene expression and transfer of genetic information, the role of microbes in environments including the human body, and applications of microbiology to food production and biotechnology.	Sustainability Related
Introductory Biogeochemistry	MBIO 2230	Microbiology	UG	The roles and interactions of biological, chemical and geological reactions in determining the composition of the environment. Microorganisms as major agents of biogeochemical change and their roles in the element cycles will be especially emphasized.	Sustainability Related
Indigenous Peoples in Canada (Part A)	NATV 1200	Native Studies	UG	A survey of the political, social, and economic situations of the contemporary First Nations, Métis, and Inuit Peoples of Canada.	Sustainability Related
Community Development	NATV 2110	Native Studies	UG	seek. It involves a plan that captures the spirit of a community and stirs the imagination of the members. Obstacles include lack of	Sustainability Related
Health and Physical Aspect of Aging	NURS 2610	Nursing	UG	An introduction to health, well-being and aging. Emphasis on health as multidimensional including physical, social and mental health. Integration of theory and research in examining selected issues related to health and physical aspects of aging.	Sustainability Related
Political Philosophy	PHIL 2300	Philosophy	UG	An analysis and evaluation of the main ideals - justice, freedom, happiness, equality, and self-realization - of the great political	Sustainability Related
Fundamentals of the Philosophy of Religion	PHIL 2740	Philosophy	UG	A critical study of some fundamental problems in the philosophy of religion, such as the existence and nature of God, the justification of religious beliefs, the status of mystical and other religious experiences, and the significance of religious discourse.	Sustainability Related
Business Ethics	PHIL 2830	Philosophy	UG	The course will explore the application of ethical theory to business. Topics to be discussed will normally include: theories of justice, corporate responsibility, the ethics of advertising, consumer and environmental protection, and preferential hiring.	Sustainability Related
Energy Sources: Physical Aspects	PHYS 2350	Physics	UG	A detailed investigation of the physical aspects of energy production and utilization. Critical comparison of the various energy sources including solar, nuclear, fossil, and wind will be emphasized. The physics of energy collection, production, storage, and distribution will be discussed in the context of thermodynamics, radiation, solid state and nuclear physics.	Sustainability Related
Weed Management	PLNT 0770	Plant Science	UG	General principles of weed management and pesticide use safety as they relate to weed control. Topics will include weed biology and identification, economic importance, principles of chemical, cultural, mechanical and biological weed management, introduction to herbicides including modes of action and factors influencing their use, selectivity, risks for development of herbicide-resistant weeds and how to mitigate this risk.	Sustainability Related
Plant Disease Management	PLNT 0780	Plant Science	UG	General principles of pest management and pesticide use safety as they relate to plant disease control. Discussion of diseases attacking field and horticultural crops in the prairies including: disease symptoms, cycles, prevention and control.	Sustainability Related
Urban Agriculture	PLNT 1000	Plant Science	UG	Urban environments and their importance for food production, increasing biodiversity, and reducing pollution are presented. Topics include principles of vegetable, fruit and herb production, landscape plants, and utilization of natural systems for composting, water management and reduced pesticide use. Benefits to environment, community development, and human health are discussed.	Sustainability Related
Crop Production	PLNT 2500	Plant Science	UG	An introduction to the principles and practices of crop production in Canada. Topics will include physiological processes and factors affecting plant yield, plant improvement, seed production, and production of the major cereal, oilseed, forage and special crops.	Sustainability Related
Fundamentals of Horticulture	PLNT 2510	Plant Science	UG	Principles of the culture, marketing, and utilization of fruits, vegetables, and ornamentals, their contribution to the economy and well-being of consumers, and impact of horticultural activities on the environment.	Sustainability Related
Introduction to Global Politics	POLS 2043	Political Studies	UG	Introduction to the analysis of political actions and interactions within the global system. Analysis of the formation and transformations of norms and the institutional framework that influence the interactions between the various actors of the global system: competition, conflict and cooperation. Analysis of the process of institutionalization of power asymmetries within the global system over the long term.	Sustainability Related
Introduction to Global Politics II	POLS 2045	Political Studies	UG	Overview of the main theoretical traditions for the study of international political actions and interactions: idealism, realism and Marxism. Overview of contemporary transformations of the structures and dynamics of the global system: Security, war, law and international institutions and the emergence of transnational actors	Sustainability Related
International Organizations: The UN and its Specialized Agencies	POLS 3771	Political Studies	UG	Study of the role and functions played by international organizations within the global system. Analysis of the United Nations system and its various components in relation to changes in the configuration of power relations within the global system. Contributions and limits of the mechanisms ensuring the principle of collective security and the peaceful resolution of disputes.	Sustainability Related

Psychology of Gender	PSYC 2380	Psychology	UG	A critical examination of the similarities and differences between women and men with a particular emphasis on gender roles and gender identity	Sustainability Related
Social Aspects of Aging	REC 2650	Recreation Studies	UG	An examination of the social aspects of aging. Emphasis on understanding the aging process as a life transition involving adaptation through interaction with social and physical environments.	Sustainability Related
Religion and Social Issues	RLGN 2590	Religion	UG	The course examines selected ethical-social issues such as abortion, euthanasia, new genetic and reproductive technologies, and environmental and ecological issues, with reference to one or more of the world's religious traditions.	Sustainability Related
Introduction to social Welfare Policy Analysis	SWRK 1310	Social Work	UG	Examination of social welfare policy as the end product of ideologies. Introduction of elements of ideology and the comparison of competing ideological systems. The relationship of economic, political and ethical views of society and their manifestations in societal responses to human need and social services.	Sustainability Related
Human Behaviour and Social Work Practice (Part A)	SWRK 2090	Social Work	UG	Students are introduced to a broad range of theories and will develop an understanding of how people and environments reciprocally affect each other. Particular emphasis is placed on understanding how gender, race, ethnicity, socioeconomic factors, age, ability, and sexual orientation contribute to and influence human behaviour throughout the lifespan.	Sustainability Related
Emergence of the Canadian Social Welfare State	SWRK 2110	Social Work	UG	An examination of the emergence of the Canadian welfare state from its various colonial inheritances to the Canada Assistance Plan. Social, political, economic, religious, geographical, demographic and cataclysmic factors influencing the development of the welfare state are examined and analyzed.	Sustainability Related
Social Aspects of Aging	SWRK 2650	Social Work	UG	An examination of the social aspects of aging. Emphasis on understanding the aging process as a life transition involving adaptation through interaction with social and physical environments.	Sustainability Related
Cities and Urban Life	SOC 2260	Sociology	UG	A consideration of the social, cultural and urban processes and their relationship to urban life, with an emphasis on urban experience, sociality, and social inequality.	Sustainability Related
Sociology of Health and Illness	SOC 2490	Sociology	UG	A general introduction to health sociology. The course examines health and illness as social concepts by exploring the personal and structural determinants of health status, and everyday health care practices in which people engage to maintain their health and to manage illness.	Sustainability Related
The Sociology of Aging	SOC 2620	Sociology	UG	This course explores sociological approaches to the study of age-related phenomena and processes, and aging societies, with a focus on Canadian issues. Associations will be drawn between individual aging experiences and outcomes, and broader political, economic, sociocultural, demographic and historical contexts (including globalization). Strategies to promote the social inclusion of older adults and reduce age-based social inequalities will be discussed.	Sustainability Related
Soil Resources and Productivity	SOIL 0420	Soil Science	UG	(Lab required) Soil formation; soil physical, chemical and biological properties; soil classification systems, maps and reports; soil fertility, crop nutrients, soil sampling and testing; agricultural productivity. A full-day field trip is required.	Sustainability Related
Soil and Water Management	SOIL 0620	Soil Science	UG	(Lab required) Soil, water and crop management techniques and considerations for: weather and climate risk; variability of soil properties and capability; saline, sodic and acidic soils; soil erosion risk; trace element toxicity; maintenance of soil organic matter.	Sustainability Related
Women and Culture in Spain and Latin America	SPAN 2591	Spanish	UG	Panorama of Latin American culture approached from female production. Study of women's works, their conditions of production from a feminist perspective and within the theoretical framework of cultural studies. Panorama including various countries and various eras, as well as different types of production (literature, cinema, painting and sculpture).	Sustainability Related
Introduction to Women's and Gender Studies in the Humanities	WOMN 1500	Women's and Gender Studies	UG	Examination of the central concerns of women and gender in the Humanities. A focus on representation, voice, knowledge, and subjectivity.	Sustainability Related
Introduction to Women's and Gender Studies in the Social Sciences	WOMN 1600	Women's and Gender Studies	UG	Examination of women's historical and contemporary roles in the economy, family, and society from the perspective of the social sciences. Introduction of feminist theories, with emphasis on the role of gender. Topics covered focus on the social conditions of women's lives: work, health, violence and organizing for change.	Sustainability Related
Feminist Thought	WOMN 2000	Women's and Gender Studies	UG	Survey of the varieties of historical and contemporary feminist ideas.	Sustainability Related
Race, Class and Sexuality	WOMN 2500	Women's and Gender Studies	UG	An exploration of the various ways race, class, and sexual orientation impact on women's lives and identities. Focus is on how racism, classism and heterosexism are produced and reproduced both within and outside of the feminist movement.	Sustainability Related
Women, Science and Technology	WOMN 2560	Women's and Gender Studies	UG	An overview of women's historical and contemporary participation in science, issues in science and math education, feminist critiques and theories on science and gender, and the impact of technology on women's lives.	Sustainability Related
Sex, Gender, Space and Place	WOMN 2600	Women's and Gender Studies	UG	An examination of how we use places and spaces in our everyday lives to produce and maintain social differences of gender, sexuality, race, class, and citizenship. Drawing on perspectives from feminist geography and history, this course explores ideas about places (for example, homes) and spaces (for example, regions), as well as historical claims that women belong in place but men should control space.	Sustainability Related
Issues in Gender and Sexualities	WOMN 2650	Women's and Gender Studies	UG	Using a feminist critical lens, this course examines issues relating to gender and sexuality. Of particular interest will be considerations of how social, political, historical, and popular cultural forces influence representations and constructions of gender and sexuality, as well as how we understand ourselves, others, and our relationships to each other and the world around us.	Sustainability Related
Financial Risk Management	ABIZ 3540	AgBusiness and AgEconomics	UG/G	Topics explored will include risk expected returns and valuation of capital; addressing risk in the context of capital budgeting; derivative securities (i.e. futures and options) and financial risk management; the management of risk within and outside of agricultural production; and public policy.	Sustainability Related

Agricultural Human Resource Management	AGRI 3030	Agriculture	UG/G	An interdisciplinary course including topical national and international issues in agriculture. The course will vary from year to year to provide material of current interest in a wide variety of subject areas. Student participation by means of seminars will be encouraged.	Sustainability Related
Current Issues in Agricultural Systems	AGRI 4100	Agriculture	UG/G	Integration of current issues in agricultural systems including land, plant, and animal systems, coupled to the food and nutrition needs of society. Emphasis on ethics, equity, economics, and professional approaches to challenges in food systems using case studies, teamwork and scientific communication to specialists and the public.	Sustainability Related
Agroecology	AGEC 3510	Agroecology	UG/G	Examination of how ecological principles and processes apply to, and function in, managed ecosystems, with emphasis on agricultural ecosystems. Influence of agricultural practices on populations, ecosystem function and productivity. Ecological concepts as tools in managing systems.	Sustainability Related
The Animal and Its Environment	ANSC 3530	Animal Science	UG/G	This course explores how an animal is influenced by its environment with respect to effects upon health, welfare and performance. Principles of farmed animal behaviour, welfare and behavioural management, health, and facility design and modification will be considered in the context of animal/environment interactions.	Sustainability Related
Grassland Agriculture: Plant, Animal and Environment	ANSC 4410	Animal Science	UG/G	Inter-relationships between the biological components of grassland agriculture as they relate to forage production on the Canadian Prairies. Topics include utilization by wild and domestic animals, plant community relationships and role of forages in multiple land use planning.	Sustainability Related
Issues in Animal Agriculture	ANSC 4560	Animal Science	UG/G	Appreciation of the scope and complexities of current issues facing the animal industry and integrate knowledge accumulated through the Animal Systems Program using case study problems and group project work.	Sustainability Related
Women in Cross-Cultural Perspective	ANTH 3320	Anthropology	UG/G	Critical perspectives on the role of women cross-culturally, with ethnographic reference to non-Western societies and cultures.	Sustainability Related
Demography of Past Populations	ANTH 3720	Anthropology	UG/G	This course provides students with a basic understanding of demographic methods and techniques applied in analysis of long term changes in the demographic patterns of anthropological populations.	Sustainability Related
Anthropology of Human Rights	ANTH 4780	Anthropology	UG/G	Evolution of human rights. Problems in ethnological research. The course content may vary	Sustainability Related
Environmental Conflict	ANTH 4780	Anthropology	UG/G	Evolution of environmental conflict around the world. Problems in ethnological research. The course content may vary.	Sustainability Related
Problems in Canadian Racialized communities: Racism, colonialism, and social justice	ANTH 4780	Anthropology	UG/G	Social justice, racism and colonialism. Problems in ethnological research. The course content may vary.	Sustainability Related
Introduction to Human Genetics A	BGEN 3022	Biochem. And medical Genetics	UG/G	Introduction to basic principles of human genetics with emphasis on pedigrees analysis, population genetics and cytogenetics.	Sustainability Related
Evolutionary Biology	BIOL 3300	Biological Sciences	UG/G	Evolution is the ultimate cause of biological diversity. This course introduces the major questions and research methods in evolutionary biology. Topics include evolutionary genetics, adaptation, speciation, and the reconstruction of evolutionary history.	Sustainability Related
Marine Biodiversity	BIOL 4220	Biological Sciences	UG/G	Examines key ecological principles governing the maintenance of marine biodiversity, particularly in northern ecosystems. Topics include the definitions and global patterns of biodiversity and the ecological mechanisms influencing changes in these patterns in the context of applied population, community and ecosystem ecology. The course will also emphasize practical solutions, including fisheries' harvest models and marine protected areas.	Sustainability Related
Evolution and Adaptation	BIOL 4300	Biological Sciences	UG/G	Lectures and discussion on advances in evolutionary research. Topics will include systematics, evolutionary genetics, evolution and development, co-evolution, mating systems, species ranges, eco-evolutionary dynamics, and evolution in society.	Sustainability Related
Applications of Population Ecology in Fisheries and Wildlife	BIOL 4310	Biological Sciences	UG/G	The material introduced in BIOL 3310 (ZOO 3680, 022.348) is developed into the quantitative analyses of field data to form a basis for conservation and management. Topics covered include: surplus harvest models, virtual population analysis, spatial population modeling, bioeconomics, and quantitative adaptive management. Concepts are reinforced through tutorials.	Sustainability Related
Design of Light-Frame Building Systems	BIOE 4412	Biosystems Engineering	UG/G	Light-frame buildings as a structural and environmental system; structural loads in building systems; energy (heat), moisture and air contaminants in building systems; built-environment for building occupants. Hands-on labs of constructing small-scale structures for students to gain an understanding of building construction techniques.	Sustainability Related
Crop Preservation	BIOE 4420	Biosystems Engineering	UG/G	Biological and physical deterioration during storage. Methods of preserving and storing cereals, oilseeds, and other agricultural crops.	Sustainability Related
Air Pollution Assessment and Management	BIOE 4460	Biosystems Engineering	UG/G	Air pollutant sources and characteristics, their impact on the environment, their behaviour in the atmosphere. Methods of sampling and measurement and the basic technological alternatives available for separation/removal and control. Particular problems of regional interest are discussed.	Sustainability Related
Management of By-Products from Animal Production	BIOE 4590	Biosystems Engineering	UG/G	Topics covered include solid and liquid manure, manure characteristics, manure collection, storage, land application and utilization, biological treatment, design of equipment and facilities for manure handling. Environment issues, such as odour and water	Sustainability Related
Design of Water Management Systems	BIOE 4600	Biosystems Engineering	UG/G	To introduce the basic theoretical principles in the design of irrigation and drainage systems. Topics covered include the determination of irrigation depth and interval, evapotranspiration, measurement and analysis of precipitation, design of sprinkler and drip irrigation systems, selection of pumps, surface and subsurface drainage design, water quality issues, salinity management, and the environmental impact of water management practices.	Sustainability Related

Design of Assistive Technology Devices	BIOE 4610	Biosystems Engineering	UG/G	Application and design of technology for individuals with disabilities; emphasizing the development of the requisite knowledge, skills, and attitudes to evaluate, design, and implement client-centred assistive technology. A multi-disciplinary approach to learning and applying knowledge will be emphasized with engineering and medical rehabilitation students collaborating on a design project.	Sustainability Related
Remediation Engineering	BIOE 4620	Biosystems Engineering	UG/G	The theoretical basis for the engineering design of different remediation technologies to treat contaminated soil and groundwater will be introduced. Methods for site characterization, monitoring of progress in remediation, and modeling of the remediation process will be presented. Different methods such as soil washing, air sparging, bioremediation, phytoremediation, constructed wetlands, electrokinetic remediation, reactive barriers will be discussed	Sustainability Related
Bioengineering Applications in Medicine	BIOE 4640	Biosystems Engineering	UG/G	This course surveys bioengineering applications and medicine from a clinical engineering perspective. Topics include: clinical engineering practice; device development legislation; biomedical sensors; biosensors; biomaterials and biocompatibility; as well as the principles of and design for medical imaging equipment.	Sustainability Related
Textiles in Healthcare and Medical Applications	BIOE 4650	Biosystems Engineering	UG/G	This course provides students with an introduction to medical textiles and healthcare products used in current practices, as well as fundamentals for designing textile products and devices that improve the health and quality of life of human beings. The course includes both basic topics related to healthcare and medical textiles (i.e., materials and structures, nanofibers for medical uses, comfort and health problems with textiles, biocompatibility and biostability issues) and applications of textile products for healthcare and medical end uses (i.e., protective and hygiene textiles, external devices, tissue engineering and intelligent/smart textiles).	Sustainability Related
Catholic Social Teaching	CATH 3900	Catholic Studies	UG/G	An introduction to Catholic social teaching with a dual focus on critical theory and praxis. Students will engage the Church's position on issues such as human dignity, solidarity with minority and oppressed populations, the common good, subsidiarity, rights and responsibilities, as well as the preferential option for the poor.	Sustainability Related
Biophysical Chemistry	CHEM 3570	Chemistry	UG/G	The application of physical chemistry to biological problems, with an emphasis on quantitative interpretation. Topics include enzyme kinetics, bioenergetics, transport processes and spectroscopy.	Sustainability Related
Engineering Management and the Environment	CIVL 4100	Civil Engineering	UG/G	Teams of students apply environmental management techniques, such as: impact assessment, site assessment, and auditing to selected engineering construction projects and operations; several oral and written reports are required.	Sustainability Related
Solid Waste Management	CIVL 4130	Civil Engineering	UG/G	Engineering principles and the practice of integrated management of solid wastes, including characteristics, sorting, utilization and final disposal in landfill. Principles of leachate and hazardous waste management and disposal.	Sustainability Related
Environmental Systems	CIVL 4180	Civil Engineering	UG/G	Development of a river water quality model; waste allocation modelling; modelling of the sites selection process; analysis of environmental impact using technical and non-technical (i.e. sociological, ethical, aesthetic) parameters.	Sustainability Related
Geotechnical Design	CIVL 4220	Civil Engineering	UG/G	Site characterization; design and construction of surface footings, deep foundations, tunnels, earth and rock support systems; design and remediation of slopes; frozen soils and foundation design; geosynthetics and geofabrics in geotechnical construction; reinforced earth; geoenvironmental issues; tailing dams, clean-up, and remediation.	Sustainability Related
Geotechnical Earthquake Engineering	CIVL 4232	Civil Engineering	UG/G	Introduction to soil dynamics and geotechnical earthquake engineering. Behavior of soil subjected to various types of dynamic or cyclic loadings; liquefaction and lateral spreading of soil; design of shallow and deep foundations. retaining structures, slopes and pavements subject to seismic loading; design code provisions	Sustainability Related
Design of Urban Water Systems	CIVL 4300	Civil Engineering	UG/G	Water supply and the design of water distribution systems. Urban hydrology and design of wastewater and stormwater collection systems. Manitoba specific applications will be discussed.	Sustainability Related
Infrastructure Engineering and Construction Management	CIVL 4380	Civil Engineering	UG/G	Infrastructure engineering; drainage systems, maintenance engineering and management. Construction and project management; workplace health and safety, construction site field trips, construction equipment, temporary facilities, project management. Elements of law for civil engineers.	Sustainability Related
Transportation Engineering 2	CIVL 4400	Civil Engineering	UG/G	Fundamentals of traffic control for highways. Capacity and level of service analysis on urban streets. Urban supplement to geometric design guide for Canadian roads. Modelling vehicle performance. Elements of railway engineering. Design for trucks. Transportation systems management. Application of intelligent transportation systems. Basic pavement design methods. Introduction to pavement management systems. Highway accidents and design for safety. Legislative and policy framework for transportation engineering.	Sustainability Related
Transportation Systems	CIVL 4410	Civil Engineering	UG/G	Contemporary approaches to transportation planning. Data for transportation planning. Advanced demand analysis and modelling. Illustrative transport planning studies. Planning and design for public passenger transportation. Planning and design for barrier-free transportation and transport of disabled persons. Goods movement and trucking studies. Planning and design for motor carrier operations. Planning and design for grain handling and transportation. Transport planning in developing countries. Evaluating transport plans and projects. Transport and the environment. Transport and energy. Vehicle operating costs and engineering unit cost models.	Sustainability Related
Highway Pavement Design	CIVL 4420	Civil Engineering	UG/G	Soil classification and properties; soil-moisture-density-strength relationships; earthwork operations and specifications; soil stabilization; granular bases; surface drainage; structural design of flexible and rigid pavements	Sustainability Related
Watershed Processes	CIVL 4470	Civil Engineering	UG/G	Rainfall-runoff processes, flood routing; characteristics and mechanics of flow in (natural) channels; computer modelling of watershed hydrology and hydraulics; influence of man-made structures; river morphology, sediment transport prediction, design of a stable channel; river ice processes.	Sustainability related

Design Project	CIVL 4590	Civil Engineering	UG/G	An interdisciplinary project-based course involving engineering design, teamwork and delivered in studio format. Students are expected to work in pre-assigned teams under the guidance of professional engineers on a pre-determined project. Lecture material will cover project management, construction, environmental and economic issues. Each team will be required to give an oral presentation of their design project.	Sustainability Related
Dental Jurisprudence	DENT 4240	Dentistry	UG/G	This course provides an overview of the Canadian legal system. It defines and discusses legal concepts relevant to dentistry including issues in negligence, contracts, confidentiality, business and human rights. Identifying a dentist's legal responsibilities to patients, peers, employees, profession and society will underlie the entire course.	Sustainability Related
Labour Economics 1	ECON 3362	Economics	UG/G	An introduction to labour economics, including labour supply, labour demand and the determination of wages and employment. Students may not hold credit for both ECON 3362 and the former ECON 3360.	Sustainability Related
An Introduction to Development Economics	ECON 3392	Economics	UG/G	The definition and major challenges of development and an introduction to theories of growth and development.	Sustainability Related
Economic Determinants of Health Advanced	ECON 3610	Economics	UG/G	This reading course will vary from year to year depending on the needs of students and the interests of instructors.	Sustainability Related
International Trade	ECON 3670	Economics	UG/G	A study of the theory of international trade and modern trade issues including the effect of economic integration on growth, distribution, national policy and the environment.	Sustainability Related
Economic Determinants of Health	ECON 3692	Economics	UG/G	This course will analyze the debates within economics as to the effectiveness and efficiency of economic, political-economy, biomedical and behavioral approaches to health and their policy implications from America to Africa.	Sustainability Related
Topics in Environmental Health	ECON 4490	Economics	UG/G	This readings course will vary from year to year depending on the needs of students and the interests of instructors. The course content may vary. Students can earn multiple credits for this course only when the topic subtitle is different.	Sustainability Related
Economics of Conflict	ECON 4490	Economics	UG/G	This readings course will vary from year to year depending on the needs of students and the interests of instructors. The course content may vary. Students can earn multiple credits for this course only when the topic subtitle is different.	Sustainability Related
Canadian School Systems and Their Public Purposes	EDUA 3000	Education Admin, Fndns & Psych	UG/G	The purpose of the course is to explore with teacher candidates the ways in which schooling and teachers work is shaped by, and shapes, particular administrative, social, political, economic, historical, legal, organizational, and professional contexts.	Sustainability Related
Cultural Diversity in Schools	EDUA 3201	Education Admin, Fndns & Psych	UG/G	The schools welcome a large number of pupils from marginalized social groups according to, among other things, their race, their ethnicity, their mother tongue, their religion, their sexual orientation or their socioeconomic status. Study of the question of cultural diversity, taken in a broad sense, in the context of education. Acquisition of the knowledge as well as the attitudes and strategies necessary to promote the equity and quality of student learning, regardless of their background, their particularities or their circumstances.	Sustainability Related
Indigenous Perspectives in the School Context	EDUA 3313	Education Admin, Fndns & Psych	UG/G	Introduction to Aboriginal and Métis cultural perspectives in the school context: historical, anthropological, ethical and pedagogical dimensions. Development of professional skills related to teaching in an Aboriginal and Métis environment.	Sustainability Related
Aboriginal Education	EDUA 3400	Fndns & Psych	UG/G	cultural, spiritual, social, and political perspectives regarding Aboriginal education will be critically explored.	Sustainability Related
Assessment and Instruction in Classrooms and Schools	EDUA 5630	Education Admin,	UG/G	An examination of curriculum-based and classroom-based assessment to guide the instruction of students experiencing learning or	Sustainability Related
	EDUA 5670	Fndns & Psych	UG/G	family liaison, clinical engagement, and community services. Organizational strategies to enhance consultation, cooperation,	Sustainability Related
Senior Years Curriculum and Instruction: Social Sciences	EDUB 3130	Education Curric, Tchg & Lrng	UG/G	A curriculum and instruction course for the cluster of subject areas for the Social Sciences: History, Geography, Native Studies. This course provides the foundational principles for the study of curriculum, instructional strategies and assessment in the Social Sciences.	Sustainability Related
Aboriginal Perspectives and the Curriculum	EDUB 3402	Education Curric, Tchg & Lrng	UG/G	The course will focus on fostering teacher candidate pedagogical knowledge, orientations and capabilities for developing and implementing curricula for kindergarten through to Grade 12 that reflect Aboriginal perspectives.	Sustainability Related
Senior Years: Teaching Human Ecology	EDUB 4148	Education Curric, Tchg & Lrng	UG/G	A study of the planning and teaching of home economics. Emphasis will be placed on the new research on teaching, learning, assessment, principles of educational change, ICT, inclusivity, current brain research and how it affects learning, differentiated instruction, and multiple intelligences. May not be held with EDUB 2290.	Sustainability Related
Technology, Society and the Future	ENG 3020	Engineering	UG/G	Impact of technology and technological change on society-past, present, future; specific technologies, e.g. construction. machine power, computers, communications, medical, military: the process of technological change; invisible effects of technology; technology and resource use; sustainable development, limits to growth and the role of technology.	Sustainability Related
Professional Engineering Practice in Manitoba-Part A	ENG 4020	Engineering	UG/G	An introduction to the practice of professional engineering in Manitoba. Professional culture, organization and regulation; industry topics; engineering ethics and law. Emphasis on professional communication development. Restricted to students enrolled in the IEEQ Program.	Sustainability Related
Veterinary and Wildlife Entomology	ENTM 3160	Entomology	UG/G	An introduction to the insects and their relatives that affect domestic animals, pets and wildlife. Special consideration is given to life histories, insect/host interaction, evolutionary relationships, impact on host vertebrates and pest management. Not all courses are offered every year.	Sustainability Related
Crop Protection Entomology	ENTM 3170	Entomology	UG/G	A course for students requiring a foundation in entomology and knowledge of major insect pest groups in Western Canada. The pests and principles for their control (chemical, cultural, mechanical, physical and biological methods) are explored with emphasis on the entire ecosystem	Sustainability Related
Introduction to Applied Entomology	ENTM 3190	Entomology	UG/G	A course providing a foundation in applied entomology covering topics including: basic insect biology, insect pest management, insect biodiversity and the biological services provided by insects. Online lecture presentations, weekly readings and online laboratories.	Sustainability Related

Physiological Ecology of Insects	ENTM 4520	Entomology	UG/G	The effect of environmental factors such as temperature, moisture, light and other organisms on the physiology and ecology of insects	Sustainability Related
History of Designed Environments	EVLU 3000	Envir. Design Landsc & Urban	UG/G	A critical examination and appraisal of design for dwelling in the context of settlement with emphasis on representation of diverse positions on key issues in design practice. Studies will include consideration of cross cultural precedents and lessons from around the world.	Sustainability Related
Site Planning	EVLU 3002	Envir. Design Landsc & Urban	UG/G	An investigation of the relationship between natural and cultural processes in the formation of the built environment, including a review of the methods and strategies employed for site programming, inventory, analysis, and development at different scales of intervention.	Sustainability Related
Studio 4	EVLU 3008	Envir. Design Landsc & Urban	UG/G	A critical exploration of analytical, conceptual, and developmental aspects of design of the public realm in an experimental studio setting. Social, political, economic, communication, and ecological networks will be studied at the scale of neighborhood and community in the urban realm.	Sustainability Related
Landscape and Urbanism Theory	EVLU 3010	Envir. Design Landsc & Urban	UG/G	An examination through lectures, readings, seminars and essay assignments, of twentieth and twenty first century philosophical thinking, which has been influential in the theory and practice of landscape architecture, planning and urbanism. Emphasis is on ideas, paradigms, and manifestos. This will include a study of the social, political, religious, cultural, technological, and aesthetic forces behind landscape and urbanism, and the forms that these forces have generated.	Sustainability Related
Site Morphology + Grading	EVLU 3012	Envir. Design Landsc & Urban	UG/G	An examination of the means and methods used to create landscapes that are shaped by earthwork grading. This will include the study of the forces, principles, and techniques in the modelling and manipulation of the ground plane and the resolution of cultural, ecological and hydrological design considerations implicit in landform design. The course may include a pre-term drafting workshop.	Sustainability Related
Philosophy, Ethics and Aesthetics	EVLU 4000	Envir. Design Landsc & Urban	UG/G	An examination of philosophical issues and debates regarding ethics and aesthetics, and their influence and potential upon urban design and urban form in the past and present, and to speculate upon the future.	Sustainability Related
Construction Materials	EVLU 4002	Envir. Design Landsc & Urban	UG/G	A comprehensive introduction to construction materials, methods and processes. Examination of regulatory issues of human safety and techniques for communicating construction proposals with application to how this information is incorporated into contracts. Field trips to nurseries, quarries, lumber yards, and urban sites where students can observe materials transformed to comply with the requirements of designers.	Sustainability Related
Healthy Cities	EVLU 4006	Envir. Design Landsc & Urban	UG/G	This course will involve a critical examination of specific topics such as: health and community design; inner city environments; and Canadian community planning and design, and its contexts.	Sustainability Related
Plants, Ecosystems and Design	EVLU 4008	Envir. Design Landsc & Urban	UG/G	The examination of cultural and technical aspects of designing with plants will be explored in an urban context through field investigations, lectures, seminars and assignments. Issues of plant identification, planting design types, their application to contemporary landscape architecture, technical requirements, planting details and ecological integration in the urban environment will be included.	Sustainability Related
Studio 5	EVLU 4012	Envir. Design Landsc & Urban	UG/G	A radical exploration of analytical, conceptual, and socio-political aspects of urban public place in an experimental studio setting. An emphasis will be placed on design as mediation between competition demands. The studio incorporates the theory and application of three dimensional simulation technology in design.	Sustainability Related
Studio 6	EVLU 4014	Envir. Design Landsc & Urban	UG/G	This studio integrates planning and design from the scale of urban infrastructure through to design detail in the context of landscape and urbanism. An emphasis is placed on the challenges of relevant equitable environmental and social design in the post-industrial world. The studio incorporates the theory and application of CAD and GIS technology in design.	Sustainability Related
Principles of Urban Design	EVLU 4018	Envir. Design Landsc & Urban	UG/G	This course will examine urban design principles, practices, and applications including political and social systems, and their impacts on the contemporary urban condition.	Sustainability Related
Sunshine, Freedom and a Little Flower: Geography and Wellbeing	ENVR 3000	Environment	UG/G	Selected topics of current interest in the Environmental Sciences and Studies related to geography and wellbeing. Course content to vary with each offering depending on the needs and interests of students and faculty.	Sustainability Related
Aquatic Ecosystem Services	ENVR 3000	Environment	UG/G	Selected topics of current interest in the Environmental Sciences and Studies related to aquatic ecosystems. Course content to vary with each offering depending on the needs and interests of students and faculty.	Sustainability Related
Environment and Tourism	ENVR 3000	Environment	UG/G	Selected topics of current interest in the Environmental Sciences and Studies. Course content to vary with each offering depending on the needs and interests of students and faculty.	Sustainability Related
Environmental Conservation and Restoration	ENVR 3110	Environment	UG/G	Environmental conservation and restoration are introduced and approaches based on science and traditional knowledge are contrasted. An emphasis is placed on systems thinking and both local and international case studies.	Sustainability Related
Methods in Ecotoxicology	ENVR 3180	Environment	UG/G	This is a laboratory-based course exploring the development, conduction and application of bioassays, biomarkers, bioindicators and biomonitors in ecotoxicology. Through a laboratory setting, students learn how to perform standard bioassays for a variety of species (plants and invertebrates) as well as systems (aquatic and terrestrial) at different levels of biological organization, from the individual to the ecosystem.	Sustainability Related
Environmental Assessment	ENVR 3250	Environment	UG/G	The theory, principles and practices of environmental assessment as a planning and decision-making process to identify and mitigate adverse effects of development projects. Environmental assessment is defined in the context of federal and provincial legislation, and applicable standards and guidelines. Laboratory assignments involve practical experiences, case study review and basic report preparation.	Sustainability Related

Introduction to Environment and Health	ENVR 3400	Environment	UG/G	An overview of the linkages between human health and environmental issues. The course discusses the nature of environmental hazards, human exposure and health outcomes. Major environmental and human health issues such as air pollution, hazardous substances, endocrine disruptors and products in the home are covered.	Sustainability Related
Environmental Management Systems	ENVR 3550	Environment	UG/G	This course provides an introduction to environmental management systems and specific material on the ISO 14001 international EMS standard. Auditing principles and techniques are described with specific guidance on auditing an ISO 14001 EMS.	Sustainability Related
Green Building and Planning	ENVR 3750	Environment	UG/G	An overview of the concepts and tools of Green building design and Green Planning. The course covers the history and trends in Green Building and Planning, related policies, tools and techniques. There is a strong emphasis on learning from local case-studies through seminars and field trips.	Sustainability Related
Professional Development in the Environmental Sectors 2 (Part A)	ENVR 3900	Environment	UG/G	Attendance and participation in seminars, conferences and workshops to foster greater interaction between students and practitioners in the environmental sectors. Students improve professional skill sets through assignments and mock interviews. The normal sequence for participation is after completion of ENVR 3980.	Sustainability Related
Coop Work Term Report 1	ENVR 3910	Environment	UG/G	Work term report, completed in conjunction with the coop placement, designed to integrate professional experiences with the concepts and theories explored through academic study in environmental science. Students must be admitted into the Coop program to be registered, and receive credit.	Sustainability Related
Coop Work Term 1	ENVR 3980	Environment	UG/G	Work assignments in business, industry, research or government for students registered in the Honours or Major Cooperative program of environmental science or studies	Sustainability Related
Coop Work Term 2	ENVR 3990	Environment	UG/G	Work assignments in business, industry, research or government for students registered in the Honours or Major Cooperative program of environmental science or studies	Sustainability Related
Political Ecology, Discourse and Power	ENVR 4000	Environment	UG/G	This course will introduce students to the field of political ecology with a specific focus on how it can help us understand contemporary forms of environmentalism. While concern for nature has been a longstanding part of civilization, in the past 50 years, environmentalism has become intertwined with all aspects of life. Yet, at the same time, the environmental crisis grows. Political ecology, as a field of academic and activist study that examines human-environment interactions for their political and economic subtexts, can provide a useful lens on understanding this paradox. Political Ecology has the promise to illustrate the motivations for, ideologies behind, and consequences of contemporary expressions of environmentalism.	Sustainability Related
Wildlife Management	ENVR 4000	Environment	UG/G	Selected topics of current interest in the Environmental Sciences and Studies related to wildlife management. Course content to vary with each offering depending on the needs and interests of students and faculty.	Sustainability Related
Human Dimensions of Wildlife	ENVR 4000	Environment	UG/G	Selected topics of current interest in the Environmental Sciences and Studies related to the human dimensions of wildlife. Course content to vary with each offering depending on the needs and interests of students and faculty.	Sustainability Related
Environmental Science Field Investigations	ENVR 4020	Environment	UG/G	Field and practical experience in selected topics of current interest in the Environmental Sciences and Studies related to field investigations in the topic, with the content to vary depending on the needs and interests of students and faculty.	Sustainability Related
Environmental Science Field Investigations II	ENVR 4020	Environment	UG/G	Field and practical experience in selected topics of current interest in the Environmental Sciences and Studies related to field investigations in the topic, with the content to vary depending on the needs and interests of students and faculty.	Sustainability Related
Environmental Science Field Investigations III	ENVR 4020	Environment	UG/G	Field and practical experience in selected topics of current interest in the Environmental Sciences and Studies related to field investigations in the topic, with the content to vary depending on the needs and interests of students and faculty.	Sustainability Related
Biogeography	ENVR 4060	Environment	UG/G	This course will provide students with a general understanding of the historical, ecological, analytical, and conservation aspects of biogeography. The course will also have a dual focus on the principles and concepts of reasons for the distribution of plants and animals worldwide, as well as incorporating discussion on as many local (Manitoba, Canada, North America) examples as possible.	Sustainability Related
Critical Thinking and the Environment	ENVR 4110	Environment	UG/G	Topical issues and responses regarding the environment including conservation, management, and policy making are critically evaluated at local, national, and global scales. Term projects emphasizing applied work with environmental organizations and researchers are presented.	Sustainability Related
Ecotoxicological Risk Characterization	ENVR 4180	Environment	UG/G	A biologically based, advanced course that will give students working knowledge of current processes and techniques for ecotoxicological risk characterization. The course material will cover the topics of problem definition, dose response characterization, exposure characterization, risk assessment, and risk management decision making.	Sustainability Related
Advanced Issues in Environment and Health	ENVR 4400	Environment	UG/G	An evaluation of global and local environmental health issues and the assessment and management tools used to manage these risks. Case studies of environmental issues and their human health effects are covered. Students have the opportunity to work on a substantial interdisciplinary environmental health project.	Sustainability Related
Aquatic Chemistry	ENVR 4550	Environment	UG/G	An examination of biogeochemical processes affecting the distribution, speciation and bioavailability of chemical substances in the aquatic environment. The theoretical basis for the chemical behaviour of natural water systems is discussed, as well as the	Sustainability Related
Advanced Issues in Environmental Law and Policy	ENVR 4650	Environment	UG/G	This course provides an in-depth review of Canadian law and policy relating to environmental protection and management. In particular, the course describes the laws governing a variety of topics related to the environment, including constitutional responsibilities, federal and provincial environmental legislation, water law, parks and protected areas, wildlife and fisheries management, species at risk, and international law including climate change.	Sustainability Related

Advanced Methods in Geomatics	ENVR 4872	Environment	UG/G	This course focuses on the theory and application of geomatics in spatial problem solving in geography and the environment. The use of geomatics' technologies including GIS, Earth observation and spatial numerical methods will be covered. Students will learn the theoretical underpinning of spatial statistical concepts and will experiment with data exploration, inference and hypothesis testing. Lab assignments will provide practical experience with GIS and other geomatics software as well as CRAN-R.	Sustainability Related
Work Term 3	ENVR 4980	Environment	UG/G	Work assignments in business, industry, research or government for students registered in the Honours or Major Cooperative program of the environmental science or studies program.	Sustainability Related
Architectural Technology 1 – Structural and Sustainable Use of Materials	EVAR 3004	Environmental Architecture	UG/G	Construction materials and structural theory in the analysis and design of simple wood-frame, masonry and light steel construction; fundamental passive energy systems and design strategies for material and energy reduction.	Sustainability Related
Architectural Technology 2 – Building Construction, Structures and Envelopes	EVAR 3006	Environmental Architecture	UG/G	Architectural, environmental and technical aspects of construction focusing on low-rise and medium sized wood, steel and masonry construction including issues of material production/manufacturing, soils, foundation, envelope systems, basic mechanical systems and their integration and acoustic concerns.	Sustainability Related
Architecture Design Studio 1	EVAR 3008	Environmental Architecture	UG/G	An architectural study of the human condition in relation to the natural and built environment through design oriented research exploration, analysis, evaluation and interpretation of a selected subject of inquiry. Various ways of seeing and making are applied as tools for critical thinking to align content with modes of representation.	Sustainability Related
Architecture Design Studio 2	EVAR 3010	Environmental Architecture	UG/G	Building upon first term explorations, architectural propositions are developed that seek to clarify relations between human inhabitation and the physical environment in a regional context. Design principles influenced by programmatic, theoretical, historical, technological material and environmental criteria are examined.	Sustainability Related
Architectural Technology 3 – Building Systems	EVAR 4002	Environmental Architecture	UG/G	Integrated building systems focusing on multi-story steel and concrete construction including: passive and active heating, cooling, and ventilation methods, strategies and designs, electrical, water, communication, security, fire protection, and vertical transportation systems; and building code constraints.	Sustainability Related
Architecture Design Studio 3	EVAR 4004	Environmental Architecture	UG/G	This studio focuses on the broader cultural implications of social interaction and the collective inhabitation of the built and natural environments. Architecture design explorations are influenced by a thorough examination of programmatic, theoretical, historical, technological, material and environmental criteria.	Sustainability Related
Interior Light and Colour	EVIE 3012	Environmental Interior Environ	UG/G	This course examines interior lighting and colour theories and concepts emphasizing human and ecological issues, exploration of spatial design strategies and practices.	Sustainability Related
Human Factors and Environments	EVIE 3014	Environmental Interior Environ	UG/G	Theoretical and practical issues related to human characteristics, needs, behaviours, and interactions with and within the built interior environment.	Sustainability Related
Indoor Systems 1	EVIE 4002	Environmental Interior Environ	UG/G	In-depth, whole building examination of various integrated active and passive environmental controls systems. Focus on working with existing commercial building construction and environmental systems when integrating new interior design and ecological concepts and strategies. Introduction to building performance assessment, construction drawings and schedules	Sustainability Related
Indoor Systems 2	EVIE 4004	Environmental Interior Environ	UG/G	Broad exploration of a variety of contemporary and innovative building technologies and their integration with interior design. Focus on ecological, new building construction concepts and measure, delivered in the context of integrated design team processes and building systems innovation. Integration and coordination of interior architectural elements with active and passive building systems.	Sustainability Related
ID Studio 4.2	EVIE 4012	Environmental Interior Environ	UG/G	Design studio with the potential for collaboration, exploring regional and global influences, communication technology, history and temporality in the design of interior environments.	Sustainability Related
Theories of Social Development	FMLY 3012	Family Social Sciences	UG/G	This course is a survey of social development theories that have influence the study and practice of development since the 1950s. It addresses the question of why theories of social development are necessary and why different theories emerged at particular times in history. This course examines explanations of development and underdevelopment as they impact on individuals, families and communities. Not	Sustainability Related
Families as Consumers	FMLY 3400	Family Social Sciences	UG/G	An examination of the factors that influence the consumer behaviour of individuals and families across the life course, with particular attention to the situation of vulnerable consumers. Theory, education, policy and practice are related to contemporary consumer issues and the impact of consumption behaviour on the environment.	Sustainability Related
Fundamentals of Health Promotion	FMLY 3750	Family Social Sciences	UG/G	This course provides an interdisciplinary life course perspective on theories and methods of health promotion. Current research, practices and policies in health promotion targeting individuals, families and communities will be critically reviewed with regard to issues of gender, culture, age, functional ability, socio-economic status, sexual orientation, and other determinants of health.	Sustainability Related
Introduction to the Development of Programs for Children and Families	FMLY 3780	Family Social Sciences	UG/G	An introduction to the theory and practice of program development with special emphasis on programs for children and families. The course will cover techniques for conducting need assessments, as well as the process of planning and implementing programs to address community need.	Sustainability Related

Social Development Policies	FMLY 4012	Family Social Sciences	UG/G	This course examines the formulation of social development policies and the impact of these policies on the well-being of individuals, families, and communities. The course uses a seminar format to foster students' capacity to understand and examine policy issues. Students will develop skills in understanding, analyzing, and formulation social development policies. Actual social development case studies will be evaluated and alternative family and community oriented policies discussed.	Sustainability Related
Aging and Risk in a Global Context	FMLY 4220	Family Social Sciences	UG/G	This course will take an interdisciplinary perspective on definitions of risk associated with a variety of determinants that shape the daily lived experience of older adults, their families and communities, and the institutions that care for them. Students will evaluate programs, policies and research, and engage in a final project of their choice.	Sustainability Related
Family Economics: Poverty and Wealth	FMLY 4400	Family Social Sciences	UG/G	Analysis of principles, major problems and trends in the economic welfare of individuals and families in both the Canadian and global economies. Emphasis on families and their relationships to the economy such as income inequality, family economic policy, human capital, poverty and resource distribution within families.	Sustainability Related
Work and Family Issues	FMLY 4480	Family Social Sciences	UG/G	An exploration of the interface between paid work and unpaid work and families in the Canadian and international contexts. Topics include demographic trends; parenting, child and elder care; management of work-family conflict; development of workplace solutions; and social policy implications.	Sustainability Related
Family Relationship, Health and Well-being	FMLY 4602	Family Social Sciences	UG/G	This course provides an indepth survey of the interaction between family relationship dynamics, and health and well-being across the life course period. The influence of family members on health-related behaviours is reviewed and preventive family-based interventions are evaluated.	Sustainability Related
A Social Justice Perspective on Indigenous Maternal and Child Health	FMLY 4606	Family and Social Sciences	UG/G	This course examines the local and global challenges regarding the health care and health care needs of Indigenous peoples, with particular attention to childbearing women, new mothers, and young children. Interdisciplinary theories and methods applied to the study of Indigenous peoples are critically evaluated from Indigenous and social justice perspectives.	Sustainability Related
Family Violence Prevention	FMLY 4802	Family Social Sciences	UG/G	Family violence prevention theories, research, practices and policies will be critically reviewed with regard to issues such as gender, culture, sexual orientation and others.	Sustainability Related
Financial Management Practices	FIN 4250	Finance	UG/G	Application of theoretical models in finance to real-world problems using cases. Topics include working capital management, long-term investment and financing decisions, valuation, risk management, reorganizations and international financial management.	Sustainability Related
Current Issues in Food and Human Nutrition	FOOD 4100	Food Science	UG/G	Integration of current issues in food and human nutritional sciences. Emphasis on ethics, equity, economics, and professional approaches to challenges in food and human nutritional sciences using case studies, team work, and scientific communication to specialists and the public.	Sustainability Related
Éthique et responsabilité sociale	GMGT 3581	General Management	UG/G	Le rôle social de l'entreprise. L'environnement interne et externe de l'entreprise; les problèmes sociaux et les activités de responsabilité sociale; l'éthique professionnelle du gestionnaire contemporain, la comptabilité sociale; les groupes défavorisés; etc.	Sustainability Related
Gestion des organisations sans but lucratif	GMGT 4151	General Management	UG/G	Description et analyse de la dynamique des organismes sans but lucratif (OSBL) : leur environnement spécifique, leur fonctionnement interne et leurs modes d'intervention dans la communauté. Approfondissement de la compréhension de la spécificité du secteur tertiaire, ce qui rend apte à y intervenir efficacement soit en tant que gestionnaires, soit en tant que bénévoles.	Sustainability Related
Introduction to Microclimates and Micrometeorology	GEOG 3320	Geography	UG/G	This course introduces the concept of energy balance climatology and examines relationships among climate, microclimate, and environments of the Earth's surface and human-made environments. Studies include bioclimates and hydroclimates.	Sustainability Related
Introduction to Climate Change and Its Causes	GEOG 3390	Geography	UG/G	The primary objective of this course is to provide students with a general understanding of the physical and astronomical factors that drive global climate change. Focus will be given to current and future climate change in the context of observations and modeling.	Sustainability Related
Urban Geography	GEOG 3460	Geography	UG/G	The course studies the processes and trends of urbanization; the classification of cities; central-place theory; cities as systems; land-use patterns; social forces and factorial ecology; and urban transport problems.	Sustainability Related
Northern Environments	GEOG 3750	Geography	UG/G	A field course designed to introduce students to either a detailed area study or to field techniques employed for specific geographic enquiry.	Sustainability Related
Special Topics in Geography	GEOG 3761	Geography	UG/G	The content will vary from year to year, so it will be possible to be credited for this course more than once.	Sustainability Related
Environment and Tourism	GEOG 3770	Geography	UG/G	This course will vary from year to year depending on the needs of students and the interests of instructors.	Sustainability Related
International Development Issues	GEOG 3770	Geography	UG/G	Historical development, population and social problems, land use and conservation, urbanization and industrialization are some of the main themes students will explore in a country of their choice. Students will gain experience with issues pertinent to groups within developing countries, including: cultural institutes, International Institute of Sustainable Development, church-based organizations, and other institutes or organizations with an international focus. This course is based on in-class discussions. Attendance expectations: Attendance is mandatory. Use of cell/laptop to access internet is useful but not essential.	Sustainability Related
Social Hazards	GEOG 3770	Geography	UG/G	This course will vary from year to year depending on the needs of students and the interests of instructors.	Sustainability Related
Geographies of Energy, Environment and Society	GEOG 3770	Geography	UG/G	This course will vary from year to year depending on the needs of students and the interests of instructors.	Sustainability Related

The Pan-American Francophone Space	GEOG 3831	Geography	UG/G	The study of French-speaking communities in the Americas in time and space. The establishment of the Pan-American Francophonie and the circumstances of its break-up. Its economic, social, political and cultural stakes. Francophone infrastructures, institutions and networks.	Sustainability Related
Animal Geographies	GEOG 3860	Geography	UG/G	This course presents a variety of topics concerning the interactions between humans and animals, how humans influence and use animals, and the many roles animals play in human lives and environments. Animal Geographies lies at a meeting point between physical and human geography, where we must consider the blurring boundaries between what it means to be animal/human, and the implications of how animals are used and represented. A wide variety of perspectives, beliefs, and points of view will be explored.	Sustainability Related
Food Geographies	GEOG 3870	Geography	UG/G	This course provides a critical examination of the geographies of food at a variety of scales, from the body to the global. The course focuses on themes in three interconnected areas: 1) food production and the global food system from farm to plate including agribusiness and alternative food production and distribution models; 2) food consumption habits and beliefs and foodways as geographically contingent material culture; and 3) food (in) security and its relationship to health and wellbeing.	Sustainability Related
Geography and Wellness	GEOG 3890	Geography	UG/G	This course explores how human environment relations influence our mental, emotional, and physical wellbeing. Students will delve into current research in health and wellness geography and related disciplines, particularly focusing on: therapeutic landscapes, ecological loss and grief, sacred spaces, and environmental influences on mental wellbeing.	Sustainability Related
Ecosystem Management	GEOG 4050	Geography	UG/G	This course will provide students with an understanding of the practical applications of ecological science, environmental policy, and resource management approaches in the large-scale planning of landscapes. The course will review ecological principles and trace the historical development of the ecosystem concept. Comparisons are made to other possible environmental management approaches. The synthesis of major elements and concepts will be reinforced through case studies on the Manitoba landscape, with an emphasis on practical learning by students through field seminars and group discussions.	Sustainability Related
Biogeography	GEOG 4060	Geography	UG/G	This course will provide students with a general understanding of the historical, ecological, analytical, and conservation aspects of biogeography. The course will also have a dual focus on the principles and concepts of reasons for the distribution of plants and animals worldwide, as well as incorporating discussion on as many local (Manitoba, Canada, North America) examples as possible.	Sustainability Related
Gender and the Human Environment	GEOG 4280	Geography	UG/G	This upper-level seminar course will develop in students a depth and breadth of understanding appropriate to the honours undergraduate/graduate level in the area of gender geography scholarship. From critical social science theoretical positions, this course asks students to examine what we can learn about how humans live on the earth if we see them as gendered. Just as we may also understand humans and their interactions in and with spaces, places and environments through the lenses of race, ethnicity, class, age and/or combinations of these categories with gender.	Sustainability Related
Geographies of Health and Health Care	GEOG 4290	Geography	UG/G	This course provides an introduction to and critical examination of the geographies of health and healthcare. Topics include perceptions and determinations of health and health care; health care delivery, focusing on spatial patterns and inequities; and the relationship between environment and health, particularly impacts of environmental contamination.	Sustainability Related
Synoptic Meteorology and Weather Analysis	GEOG 4300	Geography	UG/G	Applied aspects of meteorology are described in terms of weather analysis and forecasting techniques for synoptic-scales and meso-scales using various meteorological tools. An introduction to severe weather forecasting techniques will also be described.	Sustainability Related
Concepts in Atmospheric Modeling	GEOG 4330	Geography	UG/G	This course will primarily focus on numerical modeling applications and techniques of the Earth's atmosphere with an emphasis on weather prediction. This includes understanding basic modeling terminology, numerical schemes, structure of models, types of models, what is required to run a model, and an introduction to data assimilation and ensemble techniques to weather prediction.	Sustainability Related
Global Climate Change	GEOG 4390	Geography	UG/G	Students will be introduced to the complexities of climate changes through a series of introductory lectures and reading assignments that focus on recent scientific publications and review articles (mathematical skills are not required). Both sides of the climate change debate will be addressed in weekly assignments, and students will defend their conclusions in classroom discussion. Each student will take on a project in some aspect of climate change -- glaciers, sea ice, temperature trends, precipitation, agriculture, animal migration, aerosols, or a regional impact.	Sustainability Related
Techniques in Climatology	GEOG 4560	Geography	UG/G	Instrumentation, the sources of climatic data, and the use of satellite photography, as well as methods of analysis and presentation are discussed.	Sustainability Related
Aviation Geographies	GEOG 4670	Geography	UG/G	Intensive study of selected geographic issues related to aviation geographies.	Sustainability Related
Applied Qualitative Research: Making a Difference	GEOG 4670	Geography	UG/G	Intensive study of selected geographic issues related to making change and differences in society.	Sustainability Related
Human Dimensions of Wildlife	GEOG 4670	Geography	UG/G	Intensive study of selected geographic issues related to human dimensions of wildlife.	Sustainability Related
Political Ecology, Discourse and Power	GEOG 4670	Geography	UG/G	Intensive study of selected geographic issues related to political ecology, disclosure and power.	Sustainability Related
Understanding Contemporary Environmentalism: Power and Discourse	GEOG 4750	Geography	UG/G	This course will provide students with an advanced understanding of the relationships between nature and society by examining the rise of environmentalism through the past 50 years. Special attention will be paid to recent developments within the field of environmentalism and to theoretical work in the field of political ecology	Sustainability Related

Storms-Mesoscale	GEOG 4780	Geography	UG/G	This course focuses on a range of storms and mesoscale phenomena in the summer or winter. These include thunderstorms, tornadoes, squall lines, lightning, low level jets, gust fronts, blizzards, freezing rain, orographic storm, and polar lows. The emphasis is on the physical mechanisms leading to these events and it also examines how they may change in our changing climate.	Sustainability Related
Advanced Methods in Geomatics	GEOG 4782	Geography	UG/G	This course focuses on the theory and application of geomatics in spatial problem solving in geography and the environment. The use of geomatics' technologies including GIS, Earth observation and spatial numerical methods will be covered. Students will learn the theoretical underpinning of spatial statistical concepts and will experiment with data exploration, inference and hypothesis testing. Lab assignments will provide practical experience with GIS and other geomatics software as well as CRAN-R.	Sustainability Related
Oceanography: Chemical	GEOG 4930	Geography	UG/G	This course deals with the sources, distribution, and transformation of chemical constituents of the oceans, and the processes that control them. The emphasis will be given to biologically or climatically significant elements such as carbon, nitrogen, phosphorus, iron and mercury in the Arctic Ocean.	Sustainability Related
Engineering Geology	GEOG 3420	Geological Sciences	UG/G	Engineering properties of rocks and soils, laboratory testing and site investigations in engineering geology. Engineering geology of tunnels, bridges, dams, reservoirs, shorelines, sanitary landfills, landslides, seismic risk areas, etc.	Sustainability Related
Hydrogeology	GEOG 3450	Geological Sciences	UG/G	The hydrologic cycle and basic hydrologic processes; properties of aquifers and principles of groundwater flow; well hydraulics and groundwater resource evaluation; regional groundwater flow and subsurface geology; and basic chemical hydrogeology.	Sustainability Related
Mineral Exploration Techniques	GEOG 4360	Geological Sciences	UG/G	Methodologies used in exploration and evaluation of Canadian mineral deposits and case studies illustrating the application of these methods.	Sustainability Related
Global Change	GEOG 4370	Geological Sciences	UG/G	Examination of the major processes controlling global change through time. The causes, magnitude, and periodicity of changes in the geological record resulting from the variability and interaction of continents, oceans, atmospheres, climate, Earth-sun relationships, and ice sheets, with an emphasis on paleoclimate.	Sustainability Related
Mineral Resource Development	GEOG 4380	Geological Sciences	UG/G	Examination of economic, political, social, and environmental considerations that affect exploration and mining activity.	Sustainability Related
A Survey of Global Political Economy	GPE 3700	Global Political Economy	UG/G	Provides students with a systemic intellectual history of the field of Global Political Economy. The course delineates Global Political Economy as a distinctive scholarly tradition, discusses the separation of economics and politics, and surveys the tradition from classical political economy through historical materialism, development economics, imperialism, world systems theory, and more. Students will relate these approaches to contemporary issues in GPE such as economic and ecological crises, inequality, or corporate power.	Sustainability Related
Studies in Global Political Economy (Part A)	GPE 4700	Global Political Economy	UG/G	An advanced interdisciplinary seminar that will study the effects of institutions, structures, and dynamics operating in the current global political economy. Students, working in groups, will be expected to do case studies on selected local (or regional) political economies.	Sustainability Related
Introduction to Social Epidemiology	HEAL 3000	Health Studies	UG/G	This course provides an overview of the basic concepts, principles and methods of social epidemiology and their applications for research and practice from a human ecology perspective. Applications to social determinants of health across the life course may include but are not limited to income and food security, early child development and others.	Sustainability Related
Mechanisms of Disease 1	HEAL 3610	Health Studies	UG/G	This course will provide an overview of cellular processes and immunology, followed by an introduction to common processes underlying the development of human diseases. These include: cell injury and death (including metabolism and aging); neoplasia, inflammation; toxins and trauma; genetic diseases and susceptibility; and immune dysregulation. The focus will be on both local and systemic disease processes, and the progression of cells and tissues from a healthy to a pathological state.	Sustainability Related
Integration of Health Determinants for Canada and the World	HEAL 4600	Health Studies	UG/G	Students use selected case or learning scenarios to study the determinants of population health that depend on decision making in governmental or international agencies. The case scenarios present a variety of issues in the governance and management of population health.	Sustainability Related
Mechanisms of Disease 2	HEAL 4630	Health Studies	UG/G	This course will expand upon the concepts learned in HEAL 3610 by exploring systemic diseases. The focus will be on understanding how some disease processes are not constrained by individual tissues and/or organs and may progress to affect the patient systemically. Specific diseases such as cancer, diabetes, multiple sclerosis, and HIV will be used as examples.	Sustainability Related
Mechanisms of Disease 3	HEAL 4640	Health Studies	UG/G	Students will learn experimental techniques commonly used in modern biomedical science through lectures and laboratory sessions. Students will have the opportunity to conduct hands-on experiments in a modern research setting by rotating through five laboratory modules that will explore biomedical science methods such as histology and microscopy, cell culture, molecular biology, systems biology and proteomics, and HLA genotyping. These modules will be based on the diseases discussed in HEAL 4630, and will allow students to establish a direct connection between their experimental work and disease mechanisms.	Sustainability Related
Cultural Perspectives on Illness and Medical Practice	HEAL 4650	Health Sciences	UG/G	The opportunity to carry out individual study in the area of interdisciplinary health. When enrolment warrants, special topics may be offered in a regular course format such as cultural perspectives on illness and medical practice.	Sustainability Related
Disease and Society in the Modern World	HIST 3574	History	UG/G	This course will emphasize the relationship between disease and imperialism, capitalist development, and war; and examine social and state responses. The course will explore connections between the biological and the cultural aspects of infectious disease experiences.	Sustainability Related

History of Aboriginal Rights	HIST 4120	History	UG/G	A study of Aboriginal rights from early contact to the present with a particular emphasis on treaties, the courts, and Aboriginal efforts to enforce specific forms of rights.	Sustainability Related
Vitamins and Minerals in Human Health	HNSC 3300	Human Nutritional Sciences	UG/G	The physiological importance of vitamins and minerals in the human body, including factors affecting dietary requirements, metabolism and roles in disease progression and prevention.	Sustainability Related
Macronutrients and Human Health	HNSC 3310	Human Nutritional Sciences	UG/G	Macronutrient functions and metabolic roles in human health, including the prevention and pathogenesis of various diseases.	Sustainability Related
Ingredient Technology for Designed Food	HNSC 3330	Human Nutritional Sciences	UG/G	Chemical and functional properties of ingredients and their application in designed foods: low fat, low calorie, high fibre, high energy and innovative food products.	Sustainability Related
Culture and Food Patterns	HNSC 3350	Human Nutritional Sciences	UG/G	A study of the cultural, sociological and psychological aspects of food patterns and behaviour.	Sustainability Related
Current Issues in Food and Human Nutrition	HNSC 4100	Human Nutritional Sciences	UG/G	Integration of current issues in food and human nutritional sciences. Emphasis on ethics, equity, economics, and professional approaches to challenges in food and human nutritional sciences using case studies, team work, and scientific communication to specialists and the public.	Sustainability Related
Nutrition and the Elderly	HNSC 4310	Human Nutritional Sciences	UG/G	The role of nutrition in health promotion and disease prevention during aging.	Sustainability Related
Nutrition Management of Disease States	HNSC 4320	Human Nutritional Sciences	UG/G	Nutritional assessment and dietary management of acute and chronic disease states.	Sustainability Related
Compensation	HRIR 4420	Human Res. Mgmt/Indus Relat.	UG/G	A review of the major concepts and design of compensation systems including: strategy, internal equity, external competitiveness, rewarding individual contributions, performance incentives, employee benefits, government regulations, union role in compensation; budgets and administration.	Sustainability Related
Diversity Management	HRIR 4511	Human Res. Mgmt/Indus Relat.	UG/G	The management of diversity from a historical, social, legal and operational point of view. The influence of workforce diversity on organizational policies, practices and procedures. Model of pluralistic organizational development linked to a set of social systems.	Sustainability Related
Change Management	HRIR 4531	Human Res. Mgmt/Indus Relat.	UG/G	Change and organizational development: process of change, agent of change. Areas of intervention: environmental and organizational changes, social processes, corporate culture, techno-structure, quality of life at work. Dilemmas and prospects.	Sustainability Related
Intercultural Management	INTB 3001	International Business	UG/G	Highlighting the influence of cultural factors on management practices and business life. Presentation of the dimensions of the culture of each country studied (religion, values, norms, history, etc.) and development of tools to facilitate the adaptation of foreign employees in these countries and the development of effective intercultural communication with their nationals .	Sustainability Related
Labour Law	LABR 3010	Labour Studies	UG/G	An introduction to legislation and interpretation, legal procedures, and quasi-judicial boards as they concern the organization of trade unions, collective bargaining, settlement of disputes, labour standards, workers' compensation, unemployment insurance and human rights.	Sustainability Related
Issues in Occupational Health and Safety and Workers' Compensation	LABR 3050	Labour Studies	UG/G	This course will explore historical, legal and political issues surrounding health and safety in Canadian workplaces with an emphasis on Manitoba. It will critically examine both the Workers' Compensation and the Workplace Health and Safety systems as they currently exist and review the role of workers, employers, unions and government in these processes. It will investigate various challenges and emerging issues in health and safety including but not limited to industrial disease, gender concerns, precarious employment and globalization.	Sustainability Related
Workplace Health and Safety	LABR 3060	Labour Studies	UG/G	An introduction to occupational health, industrial hygiene and industrial safety emphasizing the impact of chemical hazards on the body, the measure and control of hazards and the causes and prevention of industrial accidents.	Sustainability Related
Labour Relations and Occupational Health and Safety Law	LABR 3070	Labour Studies	UG/G	The economic costs of workplace injuries and sickness; the history of occupational health and safety laws and their implementation; the history and functions of workers' compensation; collective bargaining on health and safety.	Sustainability Related
Employment Legislation and the Protection of Workers	LABR 3130	Labour Studies	UG/G	An examination of the legal rights and obligations of workers and employers, and the enforcement mechanisms for the non-unionized workplace, over the course of the employment relationship from hiring through to termination or retirement. Special emphasis will be placed on statutory and common law, personal employment contracts, wrongful and constructive dismissal, human rights legislation and jurisprudence.	Sustainability Related
Human Rights at Work	LABR 3230	Labour Studies	UG/G	This course is an introduction to the basic human rights protections in Canadian workplaces that have developed as a result of collective bargaining, human rights legislation, The Charter of Rights and Freedoms and decisions of courts and tribunals. The course will also examine the concept of human rights on a broader, international and national level.	Sustainability Related
Racism and Work	LABR 3400	Labour Studies	UG/G	This course explores three central questions: What are racism and colonialism? How do racism and colonialism shape work in Canada? What strategies exist for combating racism at work, and which are most effective?	Sustainability Related
Human Rights Law	LAW 3018	Law	UG/G	Critical and constructive study, at an advanced level, of a significant major subject or set of topics in Human Rights Law.	Sustainability Related
Gender and the Law	LAW 3070	Law	UG/G	An exploration of ideas about gender differentiation in law, the legal system, legal education and the legal profession. It will offer an introduction to the feminist critique of law and feminist theories about sexual equality and discrimination.	Sustainability Related

Philanthropy and the Law	LAW 3120	Law	UG/G	This course investigates the origins of, and regulation of, charities and charity law as well as regulation of other non-profit entities. Typical topics considered in this course include the social, economic and cultural importance of an ethic of giving, the tax benefits attendant upon charitable status, dimensions of fund-raising, public and private foundations and terrorism and international charities.	Sustainability Related
Dispute Resolution	LAW 3170	Law	UG/G	This course offers a detailed exploration of the theory and practice of dispute resolution focusing on the various approaches, private and court-connected, currently used to resolve conflict. In critically examining selected alternative dispute resolution mechanisms, the course exposes students to issues such as rights-based and interest-based dispute resolution, power, gender and culture in ADR processes and the functions, and skills required of, third party interveners.	Sustainability Related
Aboriginal People and the Law	LAW 3310	Law	UG/G	A study of the laws relating to Aboriginal Peoples in North America from the colonial period to the present. Special emphasis will be given to aboriginal rights, hunting and fishing rights, the legal aspects of Indian Treaties and the Indian Act. A more general treatment will be given to a study of Aboriginal Peoples' relationship to civil and criminal law in modern Canadian society.	Sustainability Related
Employment Law	LAW 3330	Law	UG/G	A detailed study of employment law including employment principles, constructive and wrongful dismissal, just cause, human rights and remedies.	Sustainability Related
Sexual Expression, Conduct and Work in Canada	LAW 3352	Law	UG/G	This course surveys selected issues involving sexual work, performances, expression and the criminal law. The main focus of the course is on the development of obscenity and indecency laws, prostitution-related laws, voyeurism laws, artistic expression, revenge pornography, cyber sexual crimes, bestiality laws, campus sexual regulation and hateful sexual speech. Study of these topic areas is based on a doctrinal, socio-legal and anthropological history of sexual regulation beginning in ancient Pompeii and leads to an assessment of law in modern day Canada. The course thus explores theories underpinning freedom of expression, equality and liberty. The course engages doctrinal issues in criminal law, constitutional law, tort law and to a certain extent, jurisprudence and the philosophies inherent in law and society approaches. WARNING: This course contains graphic (though legal) sexual content.	Sustainability Related
Issues in Law and Bio Ethics	LAW 3380	Law	UG/G	The course deals with the legal aspects of prevention, creation, alteration, maintenance and termination of life through medical and other scientific means.	Sustainability Related
Environment Law	LAW 3600	Law	UG/G	The balance between technical development and the life-support capacity of the environment. The acquisition and nature of private rights in natural resources and their control by legislation and common law. Remedies for environmental degradation. Constitutional and international legal issues.	Sustainability Related
Public International Law	LAW 3740	Law	UG/G	Public international law has a complex history, one that lends itself to conflicting interpretations. It has also been the object of a variety of competing theoretical projects, most of which diverge radically on questions of form and substance. This course provides an historically and theoretically reinforced introduction to the basic rules, principles, and institutions of public international law.	Sustainability Related
Canadian Charter of Rights and Freedoms	LAW 3940	Law	UG/G	An in-depth study of the legal, philosophical and historical foundations of the Canadian Charter of Rights and Freedoms. Included is a study of both the American and European experience with Charters of Rights as well as Canadian case law.	Sustainability Related
Oral History, Indigenous Peoples, and the Law	LAW 3980	Law	UG/G	In this course students will explore the roots of this dynamic, yet ancient, phenomenon. Guest Lecturers will explain the concepts and practices of oral history including biblical oral traditions, African oral traditions, as well as the disparate and unique media and methodologies of remembering the past. Students will consider the public perceptions of oral history, the modes of memory recall, orality relation and transmission. Students will study the effect of trauma, the reliability of eye witness testimony, and the specific physical Indigenous traditions of memory encoding.	Sustainability Related
Indigenous Economic Development and the Law	LAW 3980	Law	UG/G	Critical and constructive study, at an advanced level, of a significant major subject or set of topics related to Indigenous economic development and law.	Sustainability Related
Sexual Expression Conduct and Work in Canada	LAW 3980	Law	UG/G	Critical and constructive study, at an advanced level, of a significant major subject or set of topics related to sexual expression conduct and work in Canada.	Sustainability Related
Animals and the Law	LAW 3980	Law	UG/G	Critical and constructive study, at an advanced level, of a significant major subject or set of topics related to animals and the law.	Sustainability Related
Corporate, Social, and Environmental Responsibility	LEAD 3030	Leadership	UG/G	This course examines the responsibilities of business that accompany maximizing shareholder wealth. This includes balancing the needs of a variety of stakeholders (including owners, employees, customers, suppliers, competitors, neighbours, future generations) among a variety of forms of well-being (e.g. financial, ecological, environmental, social, spiritual, physical). Students will learn theory and best practices. Students are encouraged to take this course in the final two years of their program of studies at the I.H. Asper School of Business.	Sustainability Related
International Marketing	MKT 3300	Marketing	UG/G	A study of international similarities and differences in marketing structures, functions and processes as related to the socio-economic and cultural environment and a consideration of the opportunities and problems of international marketing.	Sustainability Related
Renewable Energy	MECH 4692	Mechanical Engineering	UG/G	Introduction to renewable energy systems, current and future global energy issues and the need for renewable energy applications, and distributed renewable energy generation. Renewable energy systems that will be considered are; solar heat, solar PV, biomass heat and power, hydro power, and wind power. Students will develop simple numerical models of renewable energy systems.	Sustainability Related

Automotive Engineering	MECH 4812	Mechanical Engineering	UG/G	Introduction to vehicle dynamics; power trains; braking systems; road loads, aerodynamics and fuel efficiency; ride and suspension systems; steering systems; tire properties and dynamics; structural analysis and crash safety; performance vehicle design.	Sustainability Related
Numerical Heat Transfer in Fluid Flow	MECH 4822	Mechanical Engineering	UG/G	General conservation equations; specific forms of the conservation equations and energy equations; finite difference methods: one dimensional steady problems, one dimensional unsteady problems, two dimensional steady problems; two dimensional unsteady problems; convection, solution for the flow fluid.	Sustainability Related
Fracture and Failure of Engineering Materials	MECH 4870	Mechanical Engineering	UG/G	Criteria for crack initiation and propagation leading to structural failure. Fracture mechanics and fracture toughness phenomena. Effects of structure geometry, loading rate, environment, temperature, composition and microstructure on material integrity.	Sustainability Related
Mechanisms of Microbial Disease	MBIO 3010	Microbiology	UG/G	A consideration of host-parasite relationships, an introduction to the immune response, microbial pathogenesis, viral diseases, clinical microbiology and public health, and an introduction to antimicrobial agents.	Sustainability Related
Microbial Communities	MBIO 3280	Microbiology	UG/G	This course will examine microbial communities, which will be discussed in terms of their composition, physiological adaptations and their effects on their abiotic and biological surroundings. Topics will include nutrient cycling, biodegradation and adaptation to extreme environments, and the applications arising from these microbial functions. Methods for quantitation of microbial biomass and biological activity will be discussed.	Sustainability Related
Molecular Biology	MBIO 3410	Microbiology	UG/G	A rigorous treatment of the foundations of modern day molecular biology as it pertains to molecular disease, gene and cell manipulation, and cellular controls.	Sustainability Related
Infectious Diseases around the World	MBIO 4030	Microbiology	UG/G	Microbiology is a very broad field that encompasses a wide range of specialized topics. In this course, students can pursue a specific topic in detail through lectures, assigned readings, seminars and research projects. The course is normally restricted to third and fourth year Honours and Major students.	Sustainability Related
Microbes in our Environment	MBIO 4480	Microbiology	UG/G	A course investigating the diversity of roles microbes play in our immediate environment, and how they affect it. Environments to be examined may include the human body, waste treatment facilities and extreme environments. Molecular tools to study the community structure and roles of individual organisms will also be discussed.	Sustainability Related
Indigenous Peoples in Canada, Part 1	NATV 12220	Native Studies	UG/G	A survey of the political, social, and economic situations of the contemporary First Nations, Métis, and Inuit Peoples of Canada from pre-contact to 1945.	Sustainability Related
Indigenous Peoples in Canada, Part 2	NATV 1240	Native Studies	UG/G	A survey of the political, social, and economic situations of the contemporary First Nations, Métis, and Inuit Peoples of Canada from 1945 to the present. This course may include a field trip component.	Sustainability Related
Indigenous Law and Identity	NATV 3000	Native Studies	UG/G	The content of this course will vary - related to Indigenous law and identity. Students can earn multiple credits for this course only when the topic subtitle is different.	Sustainability Related
Indigenous Healing Ways	NATV 3100	Native Studies	UG/G	This course allows students to work with Indigenous elders or traditional teachers on concepts of healing and wellness. Emphasis is on Anishinaabe or Cree healing practices, though other First Nations approaches may be offered. This course may include a field trip component.	Sustainability Related
Exploring Indigenous Economic Perspectives	NATV 3120	Native Studies	UG/G	Explore the impact of legal, constitutional and governance issues on the internal and external operating environment affecting Indigenous economic development. Current strategies for successful partnerships between industry and Indigenous peoples will also be examined.	Sustainability Related
Indigenous Peoples and Racism in Canada	NATV 3170	Native Studies	UG/G	This course will trace the historical and colonial roots of racism Indigenous Peoples experienced in Canadian history as well as examine its practices in contemporary society and culture. Concepts such as systemic racism, cultural difference and anti-racist education may be explored. Class format will include readings, seminar discussions, some films and lectures. Critical reading and analysis is expected.	Sustainability Related
Indigenous Medicine and Health	NATV 3240	Native Studies	UG/G	The health, disease, and medical practices of North American Indigenous peoples. A survey of the health and health care of North American Indigenous peoples from pre-contact to modern times. Special attention will be paid to traditional concepts of health and healing practices.	Sustainability Related
Indigenous Economic Resilience	NATV 4300	Native Studies	UG/G	As the course content will vary from year to year, students may take this course more than once for credit.	Sustainability Related
Issues in Colonization	NATV 4300	Native Studies	UG/G	As the course content will vary from year to year, students may take this course more than once for credit.	Sustainability Related
Indigenous Economic Leadership	NATV 4320	Native Studies	UG/G	An analysis of current leadership strengths and challenges facing Indigenous organizations. Out of this analysis will come understanding of strategies for working effectively with Indigenous organizations.	Sustainability Related
Community Health Nursing I	NURS 3220	Nursing	UG/G	An analysis of concepts of prevention of disease/dysfunction and promotion of health in community based populations. Focus is on primary and secondary prevention and the promotion of health with identified risk groups. Population groups are assessed for risks to their physical and psychosocial health and current preventive and promotive measures analyzed and critiqued. The impact of macro systems in promoting health are discussed.	Sustainability Related
Women and Health	NURS 3330	Nursing	UG/G	Introduction to health concepts and issues as they relate to women from a woman's health perspective. Emphasis on enhancing self-care and prevention. Studies the relationship between a woman and the Canadian Health Care System, and appropriate methodology for self-care, vis-a-vis nutrition, reproduction, menarche, menopause, etc. Caution: This course is not intended for 1st year students.	Sustainability Related
Principles of Plant Improvement	PLNT 3520	Plant Science	UG/G	Basic objectives, principles, and methods of plant genetic improvement. Traditional and modern plant breeding, genetic resources, selection, and applications of tissue culture, genetic engineering and molecular markers to plant improvement.	Sustainability Related

Organic Crop Production on the Prairies	PLNT 3560	Plant Science	UG/G	Management principles and practices involved in the production of organic field and forage crops with a focus on the Canadian Prairie region. Also available in online delivered format.	Sustainability Related
Fundamentals of Plant Pathology	PLNT 3570	Plant Science	UG/G	An introduction to the science of plant pathology. Topics include causal agents of diseases, symptoms and diagnoses, modes of infections and spread, mechanisms in disease and control, effects of the environment on disease development, and methods of disease control.	Sustainability Related
Plant Disease Control	PLNT 4270	Plant Science	UG/G	Diseases attacking field crops and horticultural plants: recognition of symptoms, methods of prevention, alleviation, and control.	Sustainability Related
Grassland Agriculture: Plant, Animal and Environment	PLNT 4410	Plant Science	UG/G	Inter-relationships between the biological components of grassland agriculture as they relate to forage production on the Canadian Prairies. Topics include utilization by wild and domestic animals, plant community relationships and role of forages in multiple land use planning.	Sustainability Related
Development Plant Biology	PLNT 4570	Plant Science	UG/G	An introduction to mechanisms regulating morphogenesis and plant growth and development. Emphasis will be on experimental approaches used to investigate pattern formation at sub cellular, cellular, tissue and organ levels. A heavy tissue culture component in the lab will implement the lecture topics and will provide new insights into ways to study plant development in vitro.	Sustainability Related
Physiology of Crop Plants	PLNT 4590	Plant Science	UG/G	Concepts dealing with the physiological response of crop plants to the environment from the time of seed germination through to reproduction.	Sustainability Related
International Political Economy	POLS 3250	Political Studies	UG/G	A survey of the relationship between political authority and the production and distribution of global wealth. Emphasis is placed on the historical development of international political economy, its fundamentals, as well as major theoretical perspectives.	Sustainability Related
Poverty, Politics and Policy	POLS 4170	Political Studies	UG/G	The content of this course will vary. Contact department for a course description. The course content may vary. Students can earn multiple credits for this course only when the topic subtitle is different.	Sustainability Related
Politics of Development	POLS 4200	Political Studies	UG/G	A survey of the problems and prospects facing developing countries with a particular focus on the changes in international economic governance in the aftermath of the financial crisis and the Great Recession, the role of the state in development and the political economy of emerging economies.	Sustainability Related
The Politics of Wellbeing	POLS 4310	Political Studies	UG/G	Topics may include, but are not limited to: advanced history of political theory, advanced contemporary political theory, political theory and the family, liberalism and critics, toleration, political theory and gender, and conservative political theory. The course content may vary. Students can earn multiple credits for this course only when the topic subtitle is different	Sustainability Related
The Psychology of Social Change	PSYC 4540	Psychology	UG/G	Course content may vary from year to year, but in general it will entail either some specific topic of prominent interest in psychology or a psychological analysis of some problem of current public interest. The course content may vary. Students can earn multiple credits for this course only when the topic subtitle is different.	Sustainability Related
Psychology of Health and Aging	PSYC 4566	Psychology	UG/G	This course considers how adults adapt to the challenges of aging and the accompanying health problems. Seminar discussions will focus on selected psychological theories and related empirical literature regarding belief systems that operate in the face of health- and age-related challenges.	Sustainability Related
Indigenous Perspectives on Land-Based Education	REC 3770	Recreation Studies	UG/G	This course provides an introduction, overview and exploration of Indigenous knowledge systems and ways of knowing as an entry point to understanding Indigenous land-based education on Turtle Island (North America). Treaties, stories, traditional ecological knowledge and ways of living as well as an intensive land-based experiential learning weekend will be used to explore historical and contemporary Indigenous perspectives of the land and land-based education.	Sustainability Related
Contemporary Canadian Social Welfare	SWRK 3130	Social Work	UG/G	An examination of social welfare in Canadian society, leading to an evaluation of present approaches in the light of changing economic and social conditions and changing needs.	Sustainability Related
Feminist Perspectives on Social Work Practices & Social Welfare Policy (Part A)	SWRK 4210	Social Work	UG/G	An analysis of social work practice and welfare policy from a feminist perspective. Course emphasizes the integration of social work intervention with policy in the social welfare context and overlays concepts such as empowerment, ecological practice, oppression, and practice in context of cultural diversity.	Sustainability Related
Feminism and Sociological Theory	SOC 3350	Sociology	UG/G	A critical examination of how gender has been addressed in classical and contemporary sociological theories, with consideration of how sociological inquiry is being transformed through feminist theory and practice.	Sustainability Related
Sociology of Work	SOC 3370	Sociology	UG/G	An examination of work as a central aspect of human social life; its changing nature and content in response to technological, political, and social change; how work is organized and understood by employers and workers; its consequences for individuals, social institutions, and society.	Sustainability Related
Sociological Perspectives on the Social Determinants of Health	SOC 3450	Sociology	UG/G	This course will apply a sociological perspective to a critical and theoretically informed study of the social structures influencing personal and population health, including intersections of class, gender, ethnicity, and aging as sources of health inequities.	Sustainability Related
Ecological Crisis, Work and Capitalism Today	SOC 3460	Sociology	UG/G	This course will apply a sociological perspective to a critical and theoretically informed study of the social structures influencing personal and population health, including intersections of class, gender, ethnicity, and aging as sources of health inequities.	Sustainability Related
Political Sociology	SOC 3471	Sociology	UG/G	Critical evaluation of sociological theory and research relating to power relations in society. The various aspects of power (economic, political, ideological), class conflict, socialization, the origin, functions and evolution of the state.	Sustainability Related

The Sociology of Health Care Systems	SOC 3540	Sociology	UG/G	An analysis of the social organization of formal and informal health care, including topics such as professionalism and health care, the nature of therapeutic relationships, institutional vs. community-based care, social reform and health care policy, medicine and the state, and emerging patterns of health care.	Sustainability Related
Sociology of Mental Disorder	SCO 3660	Sociology	UG/G	A study of the social processes involved in becoming and being mentally ill. Topics such as the public imagery of madness, decision-making rules in psychiatry, life in the mental hospital, and community attitudes toward the mentally ill will be considered.	Sustainability Related
Society and Education	SOC 3730	Sociology	UG/G	A critical examination of schools at all levels and the challenges they face. Issues such as, curriculum, classroom interaction, gender, race, class and equality of educational opportunities will be explored. The course should be useful to students interested in careers in education and counselling.	Sustainability Related
Power and Inequality in Comparative Perspective	SOC 3890	Sociology	UG/G	Engaging in a cross-temporal and cross-national investigation, this course critically surveys classical and contemporary debates around the inevitability of social inequality, and explores the ways that inequalities have been reproduced and rationalized, or attenuated and challenged, throughout human history. Key facets and indicators of inequality (such as poverty, homelessness, social exclusion and the distribution of income and wealth) and their relation to central axes of social inequality (class, gender, race/ethnicity and age) are considered. Put simply, this course is concerned with 'who gets what and why?'	Sustainability Related
Advanced Seminar in Criminology	SOC 4490	Sociology	UG/G	A critical examination of the field of criminology and the work of criminologists in shaping modern sensibilities about crime, law, and social justice. Topics include the origins of modern criminology, the development of competing knowledge frameworks in criminology (including the impact of feminist, post-modern, and post-colonial criminologies), and trajectories of 21st century criminology (including scientific, global, and public criminology).	Sustainability Related
Introduction to Agrometeorology	SOIL 3060	Soil Science	UG/G	Basic description and discussion of properties of the atmosphere, radiation, temperature, effect of temperature on plant growth, climate and animal response, water, evapotranspiration, insect adaptation, activity in relation to climate, climatic data.	Sustainability Related
Economics and Ethics	SOIL 3520	Soil Science	UG/G	formulations used in Western Canada; History, practice, successes and failures in the use of pesticides in agriculture; Pesticide use	Sustainability Related
Soils and Landscapes in Our Environment	SOIL 3600	Soil Science	UG/G	Discover why soil is an essential resource. Explore the roles of soils and landscapes within natural and agricultural ecosystems by learning the fundamental biological, chemical and physical properties and processes; soil and landscape classification and evaluation	Sustainability Related
Soil Ecology	SOIL 4400	Soil Science	UG/G	Explore the application of soil biology to diversity in agro ecosystems, response of soil organisms to management, mediation of important environmental issues, and promotion of human health. Appreciate the vast array of soil organisms and their functions in soil ecosystems, understand cycling of nutrients by soil organisms, and discover quantitative methodology in determining soil biochemical processes. The laboratory provides hands-on experience in observing, quantifying and isolating soil organisms and the biochemical processes they conduct.	Sustainability Related
Remediation of Contaminated Land	SOIL 4500	Soil Science	UG/G	Physical, chemical and biological approaches to remediation of land including; nature of contaminants, procedures for assessing the extent of the impact, consequences to the environment, approaches to remediation and case studies of contaminant remediation.	Sustainability Related
Ecocritical Theatre	THTR 3610	Theatre	UG/G	Through the frame of ecocriticism, the study of the relationship between human cultural expressions and the environment, this course will investigate a selection of plays that treat environmental issues. We will begin with late nineteenth century European drama, in which rapid technological and cultural changes were paralleled by the rapid renewal of theatrical environments by a series of playwright innovators. Plays by Henrik Ibsen, Anton Chekhov and Samuel Beckett will enable reflection on differing views of nature, and allow consideration of materialism, dehumanization, exploitation and deception. In the mid- twentieth century our focus will shift to the emergence of an ecological perspective in Canadian drama, looking both at traditional scripted works and postdramatic and site-specific performances. Through these plays and related interdisciplinary readings, the class will study the interplay between science and culture, and assess the social, cultural, political, and economic dimensions of the environmental crisis. We will debate the role of the theatre in dramatizing social and environmental issues and pursuing ecological preservation	Sustainability Related
Sex Work in Contemporary Canadian Culture	WOMN 3100	Women's and Gender Studies	UG/G	This course examines cultural linkages between femininity and prostitution in the context of contemporary Canadian culture. The course begins by considering historical cultural and feminist discourses about sex work and sex workers. Keeping in mind that the actual exchange of sexual services for money is currently legal in Canada, course discussions will interrogate enduring representations of sex work/ers. The course also examines some prostitution-related legislation, ideological and "real world" linkages between violence and prostitution, and ongoing activism that reinforce or resist negative representations and the violent realities of sex work/ers in Canada today.	Sustainability Related
Transnational Feminisms	WOMN 3520	Women's and Gender Studies	UG/G	Introduction to transnational feminist perspectives in order to analyse our contemporary world, including gendered, racialized, and classed power relations and inequalities. Focus is placed on how current global phenomena such as neoliberalism, structural adjustment, and migration shape people's lived experiences in different regions of the world.	Sustainability Related
Feminist Community Organizing: Theories and Practices	WOMN 3550	Women's and Gender Studies	UG/G	Overview of organizing efforts and techniques, community issues and strategies that women have developed in North American and especially Canadian communities. Focus is on a synthesis of thought and action, theory and practise	Sustainability Related
Feminist Perspectives on Violence Against Women	WOMN 3560	Women's and Gender Studies	UG/G	An overview of feminist research and theories on violence against women as an integral component of our social structure, and on issues of social change to alleviate the problem.	Sustainability Related

Masculinities	WOMN 3620	Women's and Gender Studies	UG/G	An introduction to the key debates in masculinity studies from a feminist perspective. Considering the idea of "hegemonic masculinity" and the practice of creating a typology of masculinity, this course examines the changing forms of masculinity as a political and cultural category, using historical examples from the 19th century and the 1970s and considers the influence of feminist theories on men's engagement with masculinity in North America.	Sustainability Related
Coop Work Term Report 2	ENVR 3920	Environment	UG/G	Work term report, completed in conjunction with the coop placement, designed to integrate professional experiences with the concepts and theories explored through academic study in environmental science. Students must be admitted into the Coop program to be registered, and receive credit.	Sustainability Report