

Course Code	Course Name	Descriptions
Undergraduate Courses		
ACCT 1010	Accounting, Business and Society	Overview of accounting in business and social contexts; use of accounting information for accountability and decision making in companies, non-profit organizations, and government; major elements of accounting, including assets, liabilities, revenues and expenses; discharge of accountability by companies through corporate social and environmental reports. Exclusion(s): ACCT 2010, ACCT 2020
CENG 4140	Energy Resources, Conversions and Technologies	The course will provide the fundamental knowledge of energy resources, their conversions and utilization technologies. Basic thermodynamics such as fuel and combustion models, measurement techniques will be taught to enable students to manage basic conversion calculations and to evaluate different energy utilization options. The course will also cover topics in green energies and fuels, providing an outlook of future energy uses. Prerequisite(s): CHEM 1010 OR CHEM 1020 Background: CENG 2210 OR MECH 2310
CENG 4710	Environmental Control	Wastes from the process industries. Behavior of toxic chemicals in atmospheric, soil and aquatic environments. Adsorption/desorption, air stripping, steam stripping, supercritical extraction. Pyrolysis, biological, catalyzed and uncatalyzed reactions. Integrated environmental control.
CENG 4720	Environmental Impact Assessment and Management Systems	This course will review the methods for assessing environmental impacts. Impact and management systems will be discussed in the context of both HK and international environmental legislation, which incorporates Licensing, BATNEEC, integrated pollution control, environmental management and auditing systems based on ISO 14000. Actual case studies from the process industries will be discussed. Exclusion(s): CIVL 4430 Prerequisite(s): CENG 1700 or CIVL 1140
CHEM 4310	Environmental Chemistry	Chemical phenomena in the hydrosphere, lithosphere and atmosphere; their interaction with the biosphere; origin and treatment of pollutants and hazardous waste; environmental monitoring and analysis. Prerequisite(s): CHEM 2310 OR CHEM 2311
CHEM 4320	Environmental Analytical Chemistry	Topics covered include fundamentals of sampling issues, sample pretreatment techniques, water Analysis of major and trace constituents; determination of inorganic and organic gas pollutants, Atmospheric analysis of particulate matter, determination of soil pollutants, environmental control standards, chemometrics in environmental analysis. For students with major or minor in Chemistry and in Environmental Science only. Prerequisite(s): CHEM 2310 OR CHEM 2311
CHEM 4350	Environmental Chemistry Laboratory	This is a laboratory course for students to gain hands-on experience in collecting and handling environmental samples. Experiments covered in this course will be related to collection, preparation and chemical analysis of various environmental samples. Students should seek instructor's approval prior to enrollment in the course. Prerequisite(s): CHEM 2310 OR CHEM 2311
CIVL 1140	Environmental Quality Control and Improvement	Introduction to up-to-date environmental issues in both local and global scales; providing essential physical, chemical, biological and societal concepts required to understand the nature of pollution and environmental problems; applying science, engineering, management and social science approaches to solutions to environmental issues that affect our water, air, land, eco-systems, living environment, and sustainable development. The objective of this course is to equip our next generation leaders in different disciplines with enhanced environmental awareness and knowledge of tools and solutions to environmental issues. They will therefore be able to make responsible decisions and actions, with due consideration of the environment and sustainability. Each lesson is divided into two parts. The first part is the introduction and discussion of essential concepts and environmental issues and debates of these issues and will be delivered and guided by the instructor. The second part involves presentations of projects, focus studies, or service learning activities of new, emerging environmental issues selected by student groups, with emphases on solutions to the issues. Exclusion(s): CENG 1700, CIVL 2410, ENVR 2010
CIVL 1160	Civil Engineering and Modern Society	The major objective of this subject is to provide a general overview about civil engineering in Hong Kong and use this as a context to appreciate how engineering approaches and technology be applied to address issues related to civil engineering in megacities. Lecture content includes Water Supplies, Highways, Flood Control, Drainage, Water Pollution Control, Sewerage, Environment, Environmental Protection, New Town Development, Town Planning, Slope Protection and Civil Engineering Practice. Analysis of social issues regarding the impact of civil constructions is one of the main themes of this course. Using an engineering perspective, case studies allow students to review these social issues and the group project requires students to understand the engineering process and the pros and cons of recent civil engineering developments in Hong Kong. During the site visits, practicing civil engineers and professionals will outline the necessary skills required to design and construct an engineering project or operation facility. Exclusion(s): CIVL 1110
CIVL 1170	Climate Change Risk, Mitigation and Adaptations	Overview of climate-change and related issues: the physical science basis, impacts, risk identification, mitigation and adaptation measures. Current energy systems and renewable energy resources. Green building and end-use energy efficiency. Local and regional vulnerabilities: extreme weather events, rise of sea levels, storm surge, coastal flooding and stress on water resources; associated adaptation and risk reduction measures.
CIVL 2410	Environmental Assessment and Management	Present current environmental issues and management concepts; apply essential chemical and physical principles required to understand pollution problems; integrate knowledge from science and engineering to solve and assess environmental problems affecting water, air, noise and waste; cover concepts, ordinances and case studies of environmental impact assessment of civil infrastructure projects. Prerequisite(s): (CHEM 1010 OR CHEM 1020) AND CIVL 1100
CIVL 2420	Water and Wastewater Engineering	Introduction to basic concepts of water quality, fundamentals of water and wastewater treatment processes, analysis of treatment process flowsheets, analysis of water quality management alternatives. Prerequisite(s): CIVL 1140 or CIVL 2410
CIVL 4430	Environmental Impact Assessment	This course describes relationship of environmental impact assessment (EIA) and environmental policy act; methods and procedures for environmental impact identification, prediction, evaluation and mitigation; contents in an EIA report. Exclusion(s): CENG 4720 Prerequisite(s): CIVL 1140 or CIVL 2410
CIVL 4450	Carbon Footprint Analysis and Reduction	This course aims to provide students with an understanding of the sources and impacts of climate change, national and international policies, Kyoto Protocol, carbon credits and offset concepts. As engineers to be, students will also be able to calculate organization's carbon footprint, identify suitable mitigation strategies and provide carbon reduction solutions. Prerequisite(s): CIVL 2410 OR ENVR 3210
CIVL 4460	Process Design of Environmental Engineering Facilities	Basic principles in the process design of environmental engineering facilities, such as water and wastewater treatment systems, pump station, as well as sanitary landfill disposal. Prerequisite(s): CIVL 2420
CIVL 4470	Air Quality Control and Management	Historical and health impact studies related to air pollution. Atmospheric stability and its impact on the transport and dispersion of pollutants. Sources of major air pollutants. Comparison of urban, industrial and transport related air pollution issues, using Hong Kong and Pearl River Delta as examples. Control of stationary and mobile emission sources. Air quality management - framework, policy tools and comparison of different approaches. Exclusion(s): MECH 4210
ENGG 2900	Community Services Project	This course aims to increase students' involvement in community services and provide them learning opportunities through the social services programs such as fund-raising events, greening the society and elderly services. Under the supervision of the School, students will gain experience from developing a plan, marketing through implementation of projects at a designated non-governmental organization (NGO). Students must obtain prior approval from course coordinator for enrolling in the course. Graded P or F. May be graded PP.
ENVR 1030	Environment and Health	This course is intended for UG students of all backgrounds. The course will cover concepts in environmental health including topics on outdoor and indoor environments, workplace, water and sewage, food, genetically modified organism, solid waste, communicable diseases, vectors and control, injury prevention, ionizing and non-ionizing radiation, nanomaterials, environmental health standards, monitoring methods, energy related health issues, natural and manmade disasters, etc. The discussions on each of these topics will include nature of the issue, known and potential health effects, control and regulatory approaches. Local and regional examples will be used where applicable.

ENVR 1040	The Environment and Society - A Comprehensive Perspective	This course provides students with a comprehensive understanding of the interaction between society and the environment. The class will examine the social, technological and environmental impacts of human societies past to present. This will include evaluating select environmental issues, such as climate change, from economic, social, scientific, business and health points of view. For students in their first and second year of study or those with approval from instructor for enrolling in the course.
ENVR 1050	The Sustainable Citizen	The aim of this course is to show how sustainability can be applied to the home and business environment. In addition to introducing students to a range of scientific issues the module will provide students with enhanced confidence in the balanced and accurate communication of scientific issues. For students in their first and second year of study or those with approval from instructor for enrolling in the course.
ENVR 1811	Environmental Management and Technology Study Trip I	The course is a study trip that will provide students with the opportunity to travel with a faculty member to various study sites that have a diversity of environmental or sustainability issues and see and discuss issues at the site with practitioners. The course will require students to prepare a presentation on one particular site and write a reflective report on their experience. Approval from instructor is needed for enrolling in the course. Grade P or F.
ENVR 2010	Environmental Science Fundamentals	Understanding our environment, including the ecology, biodiversity and cycles of environmental ecosystems, human environmental impacts such as climate change, energy use, chemical toxicology, waste disposal, water and air pollution; conservation; exploration of new green technologies to reduce impacts, environmental law and changes in policies to ensure sustainability. Case studies through group projects. Exclusion(s): CIVL 1140
ENVR 2020	Urban Air Pollution	The course is aimed at providing students with insights in how to deal with environmental problems and the way in which science interfaces with policies. It will cover major topics on the sources of air pollutants, air chemistry, oxidation of organic compounds and issues on control of air pollutant emissions and air quality management.
ENVR 2030	Material and Energy Balance for Environmental Management	Material and energy balance provides a quantitative account for materials and/or energy redistribution when changes happen. It is a tool which can be used to predict or solve practical problems like pollution control and management, product life-cycle analysis and management of resources (e.g. energy, food and water) for sustainable development. This course will introduce students to the fundamental principles of material and energy balance as applicable to environmental management. Covered topics include pollution control and treatment and industrial/building energy management. For EVMT students only. Exclusion(s): CENG 2010, CENG 2110
ENVR 2811	Environmental Management and Technology Study Trip II	This course is the second of two study trip courses directed at Division of Environment students in their second or third years of study. The course is a study trip that will provide students with the opportunity to travel with a faculty member to various study sites that have a diversity of environmental or sustainability issues and see and discuss issues at the site with practitioners. The course will require students to participate in the background research and selection of sites as well as assist in coordination of site visits. Students will prepare an in-depth presentation on one particular site and prepare a reflective report on their experience. Approval from instructor is needed for enrolling in the course. Graded P or F.
ENVR 3002	Introduction to Atmospheric Science	The course mainly consists of two parts: atmospheric physics and atmospheric chemistry. Atmospheric physics topics include evolution of the earth's atmosphere, introduction to the atmospheric structure, composition, dynamics, thermodynamics, circulation, and weather patterns. Atmospheric chemistry topics include tropospheric chemistry, air pollution chemistry and toxicity, greenhouse gases and climate change, stratospheric chemistry and ozone depletion. For EVMT students and students with consent from the course instructor only. Exclusion(s): ENVS 3002 Prerequisite(s): (CIVL 1140 OR ENVR 2010 OR LIFS 1030 OR PHYS 1003) AND (MATH 1003 OR MATH 1013 OR MATH 1018 OR MATH 1020 OR MATH 1023)
ENVR 3110	Sustainable Development	Sustainable development integrates improvements in human welfare with improvements in the health of the environment. It is societies attempt to solve the degradation that economic and social development has imposed on the environment. To solve environmental crises such as climate change, pollution, or destruction of biodiversity we need to integrate environmental practices into all our activities, pulling together new technologies, lifestyles, economic theories and business practices, and government policies. This course looks at how this process of integration works at the international, national, and municipal levels and from the organization perspectives of different industrial sectors, businesses, and communities. Exclusion(s): SOSC 3180
ENVR 3210	Environmental Technology	This course emphasizes on the fundamental science and engineering principles of the innovation, design, development and application of environmental technologies for conservation and pollution abatement. The course covers both existing and emerging environmental technologies for the sustainable development including energy conservation and renewable energies, carbon neutral lifestyle, green building, manufacturing and processing, technologies for improved air, water, soil qualities, waste reduction and reuse, etc. Exclusion(s): CIVL 2410 Prerequisite(s): ENVR 2010 AND ENVR 2030
ENVR 3220	Energy Resources and Usage	This course provides a non-technical overview of energy resources and their usage with a focus on policy issues and options related to ensuring adequate future supplies at acceptable prices and limiting environmental impacts. Environmental impacts will be considered primary with respect to air pollution, but also as appropriate, with attention to water quality and quantity impacts, and land degradation resulting from energy extraction, conversion, and use. Concerns about potential resource exhaustion (e.g. peak oil), future prices, climate change (and strains on other planetary boundaries) will also be considered.
ENVR 3310	Green Business Strategy	This is a course about new strategic opportunities arising from environmental risks. Public and regulatory demand for environmental products and services must co-exist with the corporate institutions of maximizing shareholder wealth. This course examines both the theoretical and practical issues that arise in attempting to balance the health of the natural environment with value creation. Is there an inherent conflict between the institutions of business and our ability to care for the environment? What competitive opportunities are created for firms and what do they have to do to seize these opportunities? The lessons from the course will be of interest to both students of strategy and the environment.
ENVR 3410	Economics for Environmental Policy and Management	This course begins with a brief review of key economic principles (e.g., economic as distinct from engineering efficiency, comparing benefits and costs at the margin, discounting). It then moves on more in-depth treatments of areas that are the focus of environmental economics. These include externalities, common property resources, market failure, 'valuation' of un-priced impacts of economic activity, and policy instruments for controlling pollution and other forms of environmental degradation. Throughout the course, the emphasis is on fostering an intuitive understanding of the topics and how they relate to real world decision making. For EVMT students only. Prerequisite(s): ECON 2103 OR ECON 2113 OR ECON 2913 OR ECON 3113
ENVR 3420	Environmental Law and Regulations	The course will provide students with the basic legal concepts which include the hierarchy of courts in Hong Kong, the difference between civil and criminal proceedings and their possible redresses or remedies available from the courts. Important provisions of the basic environmental legislation in Hong Kong, environmental prosecution policy of Hong Kong and how to investigate a judicial review against a ministerial decision relating to the environment will also be covered in the course.
ENVR 4000	Special Topics in Environmental Studies	Selected topics of current interest in environmental studies. May be repeated for credit, if the topics studied are different. Graded letter grade or P/F.
ENVR 4220	Urban and Regional Planning	The course provides an introduction to the planning process in the public sector. Fundamental planning concepts, historical overview of planning, and planning methods comprise the first part of the course. These basic ideas will be followed by application of these principles to problems in urban and regional contexts. Specific topics include the legal basis for planning, land use planning and zoning, transportation planning, economic development, and environmental planning. In addition to conceptual considerations and application, attention will be given to the planning for sustainable development; strategies for conservation and management of critical natural resources; environmental ethics in land use development. For EVMT students and students with consent from the instructor.
ENVR 4310	Green Innovation and Entrepreneurship	A critical issue for green business is managing technology-driven innovation to create sustainable competitive advantage. Major topics include: how the innovation process works; managing innovation; creating entrepreneurial companies; coping with strategic challenges facing innovators; new venture management. Students will develop their own green business plan. For EVMT students and students with consent from the instructor. Prerequisite(s): ENVR 3110

ENVR 4320	Corporate Environmental Accounting and Reporting	Environmental accounting and reporting provides the means for an organization to measure environmental impacts and report them to stakeholders. This course provides an understanding of how externalities are assigned and monetarily evaluated so a student can understand the financial pressures that the environment can impose on an organization. Best practices in measuring, monitoring and reporting environmental performance will be discussed.
ENVR 4330	Environmental Geographical Information System	This course will cover a broad spectrum of concepts and practices in Geographical Information System (GIS). It starts with the fundamental concepts and elements in geographic science and technology. Spatial data modeling and integration methods will then be discussed followed by various geospatial analysis approaches for both vector and raster data. Cartographic principles, spatial relationships, projection and coordinate systems will be discussed in-depth. During the course, students will be introduced to contemporary GIS software and apply GIS technology to support local and regional environmental planning and management. For EVMT students and students with consent from the instructor.
ENVR 4800	Environmental Management and Technology Seminar	This is a year-long seminar series presented by faculty members and guest speakers on selected topics in environmental management and technology. For EVMT students only. Graded P or F.
ENVS 2001	Environmental Conservation and Sustainability in Practice	Students will visit various field sites of Hong Kong (for example, Mai Po Nature Reserve, marine parks, research laboratories under our Environmental Science Programs, government facilities). Through this course, students are expected to gain more ideas and enhanced appreciation on local conservation/sustainability efforts, and be inspired about how to apply academic knowledge in practice. Graded P or F. Cantonese may be used in field trips, in some situations. Instructor's approval is required for enrolling in the course. Priority will be given to ENVS students.
ENVS 3001	Pollution Monitoring and Measurement	Students will learn the science background and monitoring techniques of environmental pollutants, which include the behavior of contaminants in water, sample collection, biological and chemical analyses, experimental design, and data analysis. Students will also be introduced to the advanced research infrastructure on campus. Through the course, students will gain essential background and skills for conducting environmental research or pursuing a career in the environmental field. Students are required to have sufficient background of life science and chemistry. For ENVS students only. Prerequisite(s): CHEM 1030 OR CHEM 2311
ENVS 3002	Introduction to Atmospheric Science	The course mainly consists of two parts: atmospheric physics and atmospheric chemistry. Atmospheric physics topics include evolution of the earth's atmosphere, introduction to the atmospheric structure, composition, dynamics, thermodynamics, circulation, and weather patterns. Atmospheric chemistry topics include tropospheric chemistry, air pollution chemistry and toxicity, greenhouse gases and climate change, stratospheric chemistry and ozone depletion. For ENVS and EVMT students only. Other students should seek instructor's approval for enrollment in the course. Exclusion(s): ENVR 3230 Prerequisite(s): (CIVL 1140 OR ENVR 2010 OR LIFS 1030 OR PHYS 1003) AND (MATH 1003 OR MATH 1013 OR MATH 1018 OR MATH 1020 OR MATH 1023)
ENVS 4001	Environmental Impact and Risk Assessment	This course gives an overview on the relationships between human health, environment, and sustainable development. Topics include the development and objectives of environmental impact and risk assessment; impacts of environmental quality (including air, water, wastes, ecology) and health risks; assessment and mitigation, public participation; sustainable development. Case studies and guest lectures will be included. For ENVS, LIFS and CHEM students in their third and fourth year of study only. Prerequisite(s): CHEM 1030 OR LIFS 1030
ENVS 4301	Environmental Conservation	This course covers the essential topics of environmental conservation, which includes biodiversity, ecosystems, environmental ethics and economics, environmental policy, resource management, and conservation biology. Case studies from Hong Kong and other regions will be investigated. For LIFS and ENVS students in their third or fourth year of study only. Exclusion(s): LIFS 5300 (prior to 2013-14) Prerequisite(s): LIFS 2060 AND LIFS 3160
HUMA 2621	Culture and Environment	This introductory course aims to study the relationship between "culture" and the "environment" and the impacts of cultural mechanisms on resource management, population and health practices in different cultural settings.
HUMA 2623	Cultural Sustainability in South China	In the past decades, local societies in South China experienced significant changes and many local customs and traditions are disappearing as a result of China's rapid urbanization and economic growth. The sustainability of local cultures has become a major concern. Culture is an important component of sustainable development, as it refers to how we understand and appreciate natural resources and each other. Cultural sustainability requires the recognition of indigenous cultural values and standards, as well as equal rights of the respective communities in policy planning and decision-making, and the engagement of the local community and members of the public. This course adopts an interdisciplinary approach to explore the concept, possibilities, and limits of cultural sustainability. Students are required to conduct field research projects in the Pearl River Delta region, in which they will meet the local residents and have personal fieldwork experience through interviewing and participant observation.
LIFS 1030	Environmental Science	This course introduces students to the general concepts of environment, natural resources, and sustainable development. The topics include pressing global, regional and local environmental changes; life-supporting systems of our planet; biodiversity and its conservation; atmosphere, water resources, and their pollutions; solid and hazardous waste management; environmental health and sustainable development. Throughout the course, students will gain a sufficient background and a better understanding of the root-causes of the upfront environmental issues. They will also become more aware of their role, as citizens, in environmental protection and sustainable development.
MECH 3901	Green Building Technology	This course introduces Green Buildings and the impact of their technology on the sustainability of our modern world. In complement to traditional building services taught in other mechanical engineering courses, systems providing contemporary conveniences will be discussed with emphasis on energy saving technology. Energy conservation measures such as Energy Audit procedures will also be expounded. Prerequisite(s): MATH 1013
MECH 3902	Solar Energy Technology	Principles and technologies for solar thermal energy collection, conversion and utilization. Various solar heat collection and conversion systems will be introduced. Solar heating systems, liquid based solar heating systems for buildings will be studied. Students will develop the ability to identify, formulate and solve simple to complex problems of solar thermal energy conversion and storage. Prerequisite(s): MECH 2310
MECH 4350	Indoor Air Quality in Buildings	Indoor air pollutants in buildings and their transport dynamics with respect to building ventilation systems. Design methodology in handling indoor air quality in buildings and enclosed spaces. Building environmental assessment method. Exclusion(s): IBTM 5430, JEVE 5350 Prerequisite(s): MECH 2310
MECH 4360	Introduction to Intelligent Building Systems	Introduction to intelligent building and building automation, communication, safety and security systems; modeling and control of noise, illumination, mechanical transportation, electrical, electronic, fire safety subsystems; system integration and optimization with the building envelope; code of practice in design, operational characteristics and performance specifications. Prerequisite(s): MECH 2310 and MECH 3610
MGMT 2130	Business Ethics and Social Responsibility	Taking a discussion-based approach to examining ethical issues in a corporate context, this intermediate business ethics course will focus mainly on the ethical issues related to the interaction between business and society. Students will further develop their ethical knowledge, moral reasoning skills, and attitudes towards social responsibility by considering the overarching corporate implications of their decisions. This highly interactive course will draw upon relevant current issues to help students understand (and overcome) some of the real-world challenges that business executives confront.
PHYS 1003	Energy and Related Environmental Issues	This course will introduce the basic concepts of the physical principles behind energy. Various forms of energy and their use (including electricity, fossil energy, nuclear power, various forms of renewable energy), and their impacts on the environment both from a global and a regional perspectives will be discussed. Issues related to energy conservation and related environmental issues in Hong Kong and the Pearl River Delta (PRD) will be discussed. Students without the physics prerequisite but have taken PHYS 1001 or equivalent may seek instructor's approval for enrolling in the course. Prerequisite(s): Level 3 or above in HKDSE 1/2x OR in HKDSE 1x Physics, OR a passing grade in HKCEE Physics
SBMT 2100	Social Responsibilities Project	This course is offered in the form of a community project at a designated non-governmental organization (NGO) under the supervision of the School's Undergraduate Programs Office. Each project will consist of at least four elements, namely training workshops delivered by members at the host NGO, design, implementation and execution of the service-project as instructed by the host NGO. Approval from the course coordinator is needed prior to enrolling in the course. May be graded P or F. Students may repeat the course for credits if different topics are taken.

SISP 1101	Appreciation of Our Nature	This course is offered under the program of the HKUST Summer Institute for Secondary School Students by the School of Science. The course aims at introducing the richness of diversity of living organisms around the world and their conservation programs. Local and global case studies will be used to illustrate the concepts. Course activities include lectures, field trip, and students' project presentations. At the end of the course, students are expected to enhance their appreciation on our nature.
SISP 1307	Better Environment: The Technology Behind the Stories	This course is offered under the program of the HKUST Summer Institute for Secondary School Students by the School of Engineering. The objective of this course is to provide an opportunity for secondary school students to have a taste of tertiary environmental education and to raise interest in the environmental profession. The course will introduce technologies that provide tools and solutions to environmental issues that affect our water, air, land, eco-systems, living environment, and sustainable development.
SISP 1309	Renewal Energy Applications: Wind Power for Lighting	This course is offered under the program of the HKUST Summer Institute for Secondary School Students by the School of Engineering. The course covers the use of renewable energy in intelligent buildings, typical for LED lighting. It will detail the design and implementation of energy conversion and distribution systems using the latest technologies. It also demonstrates the use of Hong Kong inventions and design in such system. The course will cover the use of design software and assembly of components of the system. The course covers: Wind turbine design and fabrication, site selection; Power generation and energy storage system using battery; Direct Current (DC) power distribution network; Light Emitting Diode (LED) lighting system; overall system design for renewable energy powered intelligent building.
SISP 1310	Engineering and Environment	This course is offered under the program of the HKUST Summer Institute for Secondary School Students by the School of Engineering. The course will focus on the impact of Engineering discipline on the environment and will focus on the contributions from each of the Engineering disciplines: (1) Biochemical, (2) Chemical, (3) Civil, (4) Computer/Information Technology, (5) Electronic, (6) Logistic and Manufacturing and (7) Mechanical Engineering.
SISP 1901	Greening Business: Challenges and Opportunities	This course is offered under the program of the HKUST Summer Institute for Secondary School Students by the Interdisciplinary Programs Office. Environmental problems force businesses to look at their impact on the planet. Some businesses worry about added costs of going green. Other businesses are finding ways to make money in new green businesses, sometimes lots of money. This course will look at where problems come from, how specific businesses react, especially in China, and how problems can also be seen as opportunities.
SOSC 1860	Population and Society	This course introduces the main concepts in the field of population studies, contemporary issues concerning the interrelationships between population and social and economic development, and examples of applications of a knowledge of population to wider social concerns, and shows how they relate to issues of concern in research, planning and policy development. Emphasis will be given to contemporary questions and their origins in recent history.
SOSC 2010	Environment and Society	Society and the environment are closely linked. In this course, we will explore these linkages at various levels from the local to the global. We will examine two sides of human and environment interaction: the important contributions that sociology can make to the study of natural resources and the environment, and important impacts that environment and natural resources have on social life, and vice versa. We will examine various types of production and consumption, materialism, population and development, and natural resource extraction, critical questions about sustainable use, capitalism, and the relationship between our patterns of resource use and the quality of life in our communities and the world. Throughout the course, we will consider several dimensions of sustainable living including: the social, the ecological, the cultural, the economic and social and environmental justice. Exclusion(s): ENVR 1040
SOSC 2170	Environment and Business	A course designed to introduce students of all disciplines to the compatibility of business profitability and preservation of the environment. Students learn: 1) what environmental sustainability means and how companies develop strategies for a sustainable future; 2) how an effective environmental strategy requires an integrated response among firms, government, and civil society, and the various regulatory, collaboration and other means used to achieve integration; and 3) how the various activities within a firm work together and within society to achieve the sustainability strategy.
SOSC 3150	Science, Technology and Environment	This course aims to provide students with the theoretical and conceptual tools needed to understand the way in which scientific and technological development relates to the environment. The course will encourage students to analyze technology from different perspectives, to ask informed questions about the driving forces of science and technology, and to understand how scientific research and technological innovation can contribute to addressing global and local environmental problems.
SOSC 3180	Sustainable Development	Sustainable development integrates improvements in human welfare with improvements in the health of the environment. It is society's attempt to solve the degradation that economic and social development has imposed on the environment. To solve environmental crises such as climate change, pollution, or destruction of biodiversity we need to integrate environmental practices into all our activities, pulling together new technologies, lifestyles, economic theories and business practice, and government policies. This course looks at how this process of integration works at the international, national, and municipal levels and from the organization perspective of different industrial sectors, businesses, and communities. Exclusion(s): ENVR 3110
SOSC 4290	China's Sustainable Development	There is a great necessity and responsibility for China to shift to a more sustainable development path. This course is designed to provide students with an understanding of the concepts, principles, and evaluation methodologies of sustainable development. The course will introduce students to multidisciplinary approaches to apply these principles and methods to analyse sustainable development issues in China, such as energy resources and water pollution, transportation and urbanization, and climate change; and to explore solutions for China's future development. Governance and policy, technology, organizational and individual behavior are important elements affecting sustainable development and will be examined at international, national, and local levels. Prerequisite(s): ENVR 3110 OR SOSC 1170 OR SOSC 3150 OR SOSC 3180
TYSP 1023	Global Climate Change and Energy Issues	This course introduces students to the concepts behind: 1) interactions among the sun, the earth, and human energy consumption that lead to global warming; 2) the evidence supporting anthropogenic causes of global warming; 3) contrarian arguments against global warming; 4) profiles of human energy consumption and implications of changes of those profiles; 5) physical, economic, and political risks of global warming; 6) mitigation of adverse impacts of global warming; 7) changes in public policy required to limit and possibly stop global warming; 8) technological solutions and innovations that complement those public-policy changes; and 9) what all of the above means for China.

Postgraduate Courses		
CBME 5780	Environmental Management, Auditing, Licensing and Impacts	This course will describe the elements of environmental Management Systems especially the ISO14000 series. The types and execution of environmental audits will be discussed and practiced using case studies. The structure of a typical environmental Legislation system will be described and the role issuing and conditions of environmental Licensing will be studied. In particular, the role of IPPC, IPC and Special Process Licensing. The assessment of the impacts of a chemical process/product is reviewed.
CBME 5810	Energy Integration and Optimization	The course covers some basic techniques in modeling, simulating and optimizing energy systems such as steam power plant, refrigeration system, heat recovery network.
CBME 5820/ JEVE 5820	Energy, environment and Sustainable Development	This course attempts to highlight the basic issues on the relation between material/energy resources, the environment and sustainable development. Potential directions for technological changes on greater efficiency of energy utilization, exploitation of renewable energy, adoption of cleaner environmental practices and waste reduction that can lead to sustainable development will be explored. Management of energy and environment towards sustainability will be introduced. Exclusion(s): CENG 5910, ENEG 5050, JEVE 5820
CENG 5910/ ENEG 5050	Energy, environment and Sustainable Development	This course attempts to highlight the basic issues on the relation between material/energy resources, the environment and sustainable development. Potential directions for technological changes on greater efficiency of energy utilization, exploitation of renewable energy, adoption of cleaner environmental practices and waste reduction that can lead to sustainable development will be explored. Exclusion(s): ENEG 5050, JEVE 5820
CENG 5920 ENEG 5100]	Energy Management and Audit	Prudent energy management holds the key to the reduction of carbon emission and sustainable development. This course introduces the basic concepts of energy management in the industrial, commercial and transportation sectors. Energy-saving is explored by applying energy/exergy analyses, identifying areas and technologies that could enhance energy efficiencies in these sectors. The practice of energy audits will be shown as an important tool of energy management schemes. Exclusion(s): ENEG 5100 Prerequisite(s): CHEM 2411, CENG 2210
CIVL 5520	Water Resources Systems Analysis	Systems approach to the area of water resources management: includes water resources systems within the context of public investment systems, criteria and design of water management schemes. Background: ECON 2113
ENVR 5250	environmental Economics and Management	The course is designed to introduce students to key contemporary concepts in environmental economics and equip them with the approaches in economics that are generally applied to analyze environmental problems and policies.
ENVR 5260	environmental Policy and Management	This course focuses both on how to make and how to study environmental policy and management. It will review major theories related to the formulation of environmental policies, including government regulation and economic incentives, and discuss the types of policy measures implemented in various public and business sectors. The discussion of environmental problems and policies will focus on examples that are relevant for Hong Kong and the Chinese Mainland, but will also include the experience of other countries and the debate surrounding global environmental issues.
ENVR 5290	Climate Change: Science, Policy and Management	This course prepares graduate students for the development of interdisciplinary research on environmental science, policy and management through a detailed investigation of climate change issues. Based on a review of the scientific research and models that have been developed through international cooperation, students will discuss relevant approaches of atmospheric and oceanographic science and the likely consequences in terms of climate change. In addition, the various technologies of mitigation and adaptation will be surveyed, leading to a discussion of appropriate policies for managing climate change at the global or national level.
ENVR 6060	Sustainability Economics	This course is designed to give students an interdisciplinary understanding on the concepts of sustainability, and its contemporary trend of development. The course will cover component concepts on sustainability, its implications from resource (renewable and non-renewable) exploitation; the strength of sustainability with respect to human made or natural capitals; the assessment for sustainability; and the inter-relationships between sustainability and business, governmental policy and human communities. Exclusion(s): SOSC 5620
ENVS 5116	Case Studies in environmental Risk Assessment	This course introduces the general principles, processes and methodologies of ERA in different developmental projects locally and globally. Specific socio-economic impacts, environmental law and policy, as well as problems and constraints of ERA implementation will also be discussed and compared through various case studies from developed and developing countries. Exclusion(s): EVSM 6070
ENVS 5118	Conservation and Sustainable Development	This course aims to address the importance of different elements and practices in conserving our biodiversity. It also introduces the concept of sustainable development to meet the future needs and balance the objectives between society, economy and environment. It explores ways of finding solutions to the challenges through the promotion of sustainable development. Exclusion(s): LIFS 5300 (prior to 2013-14)
EVSM 5240	GIS for environmental Professionals	Introducing GIS concepts, working with spatial data, managing GIS data, integrating GIS data with Google Earth/Map, remote sensing and model data, applying GIS technology to support environmental planning and management.
EVSM 5270	Environmental Law	The course will provide students with the basic legal concepts which include the hierarchy of courts in Hong Kong, the difference between civil and criminal proceedings and their possible redresses or remedies available from the courts. Some important provisions of the basic environmental legislation in Hong Kong, environmental prosecution policy of Hong Kong and how to instigate a judicial review against a ministerial decision relating to the environment will also be covered in the course.
EVSM 6070	Environmental Impact Assessment	Introduction to environmental impact assessment (EIA) and the EIA process in Hong Kong. The components of an EIA report including air, noise, water, waste management, environmental risk, ecological impact, and socio-economic impact assessments will be analyzed. environmental law, environmental management and the importance of public participation will also be discussed. Case studies from Hong Kong will be used and comparison with EIA in Mainland China will be made. Exclusion(s): ENVS 5116
FYTG 5310/ IBTM 5310	Green Building Technology	Overview of green buildings, impact of green building technology on the sustainability of our modern world, energy saving and building environmental technology, energy conservation measures, Energy Audit procedures, life cycle analysis approach in green building design, green or related building certification programs. Exclusion(s): IBTM 5310
IBTM 5330	Energy Management in Buildings	Renewable and non-renewable energy resources, review of energy conversion technologies, energy use in domestic/non-domestic buildings, energy economics, design guides, energy management and energy auditing.
JEVE 5810	Pollution Prevention and Cleaner Production	This course introduces the concept and practices of pollution prevention and cleaner production. It will cover pollution prevention and cleaner production methods that aim at minimizing industrial pollution or reducing utilization of resources in the manufacture of products or provision of services. Material and energy audits, life-cycle assessment, environmental management systems, eco-design, green technology, industrial ecology and sustainable development will be studied.
MATH 5360	Weather, Climate and Pollution	Composition and structure of the atmosphere; atmospheric thermodynamics; radiation balance; basic atmospheric dynamics, energy, momentum and water cycle of the earth; weather and climate of the Asian Pacific region; weather and pollution; variability of the climatic system; current issues (El-Nino, greenhouse warming).
MIMT 5200	Responsible Global Leadership	Responsible global leadership is the global exercise of ethical, values-based leadership in the pursuit of economic and societal progress and sustainable development. It requires the vision and courage to place decision making and management practice in a global context. Nowadays, globally responsible leaders at all organizational levels all over the world face ever-changing challenges and they are embedding global responsibility in their business to deal with these challenges. Topics in the course include understanding the global business environment, responsible leadership behaviours, corporate global responsibility and sustainable global business practices, etc..
SOSC 5620	Sustainable Development	This course is designed to give students an understanding of how government and business professionals formulate policies related to the foundations of sustainable development. The course begins with an exploration into the concept of prosperity and conventional view of development in the context of environmental limitations. From that basis we will consider the economic, political and social ramifications of sustainable development and investigate the need for rejuvenation and innovation. Exclusion(s): SOSC 301E