

interest. A partial list of the topics includes the following: Acoustics, Computer-controlled Instrumentation, Materials Science, Electronic Instrumentation, Lasers and Their Applications, Optoelectronics, Semiconductor Physics, and Spectroscopy. This course can be repeated for credit if the topic is different.

PHYS 7310 Introduction to Environmental Science (3,3,0)

After completion of this course, students will develop knowledge of (1) Ecosystem and (2) how the Ecosystem responds to environmental change due to population growth. Students should also comprehend the concepts of (3) physical and energy resources.

PHYS 7320 Principles and Technologies of Renewable Energy I (3,3,0)

This course introduce the principles and technologies of renewable energy. After completion of this course, students will learn (1) the origin of renewable energy flow; (2) blackbody radiation, solar spectrum and radiation; (3) the Earth's energy budget; (4) working principles of inorganic and organic photovoltaic cells; (5) device fabrication and architecture; (6) materials science and characterization methodology of photovoltaic cells; and (7) solar cell systems and installation.

PHYS 7330 Principles and Technologies of Renewable Energy II (3,3,0)

Prerequisite: PHYS 7320 Principles and Technologies of Renewable Energy I

After completion of this course, students will learn (1) the origin of renewable energy flow; (2) individual renewable energy sources, including solar radiation, wind, ocean waves, water flows and tides, heat flows and stored heat, biomass; (3) large scale energy conversion processes; and (4) power transmission and energy storage technologies.

PHYS 7340 Energy Harvesting and Energy Conservation (3,3,0)

Prerequisite: PHYS 7320 Principles and Technologies of Renewable Energy II

After completion of this course, students will learn the following: (1) renewable energy system analysis; (2) harvesting parasitic energy in daily life; (3) harvesting chemical energy; and (4) energy conservation.

PHYS 7350 GIS and Remote Sensing (3,3,0)

This course introduces the knowledge of atmospheric science and radiation, meteorological instrumentation, data inversion and retrieval algorithm for environmental monitoring. After completion of this course, students will learn (1) atmospheric physics; (2) radiation transfer, absorption and scattering of solar radiation in Earth's atmosphere; (3) sensors and measurement instrumentation for atmospheric parameters and constituents; (4) working principles of GPS and its data format, and GIS data representation; (5) satellite platform, airborne, and ground-based remote sensing methodology and instrumentation; and (6) data inversion methodology and algorithm.

PHYS 7360 Green Laboratory (3,0,3)

This laboratory course includes lectures, lab exercises, and project-based experiments. The laboratory provides a set of practical experiments, which related to (1) energy harvesting; (2) energy conversion efficiency; (3) energy conservation; (4) measurements of meteorological parameters and atmospheric constituents; (5) meteorological instrumentation; and (6) characterizations of energy harvesting materials and solar cells.

PHYS 7371-2 Project in Green Technology (6,0,3)

The objective of the course is to enable students to develop mastery of green technology related concepts, including energy harvesting, energy conservation, and pollution monitoring. Students are expected to perform a highly independent work. After completion of this course, they will be able to demonstrate

their mastery of course materials and apply what they have learnt in implementing practical problems. Students may propose a topic or select a project from a list of topics provided by the Department.

PHYS 7380 Advanced Topics in Physics I (3,3,0)

PHYS 7390 Advanced Topics in Physics II (3,3,0)

PHYS 7400 Advanced Topics in Physics III (3,3,0)

Prerequisite: Postgraduate standing or consent of instructor
This course are advanced courses reflecting the research interests of the time and of the faculty. Fundamental physics concepts and skills acquired from upper level undergraduate courses will be applied in these courses. Topics offered include Materials Science, Scientific Instrumentation, Modern Optics, Optoelectronics, Semiconductor Physics, Biophysics, Nonlinear Dynamic and Spectroscopy. These courses can be repeated for credit if the topics are different.

PHYS 7410 Physics for Green Technology (3,3,0)

This course covers the physics for green technology and environmental science, including classical and fluid mechanics, thermodynamics, electrostatics and electricity, electromagnetic waves, optics, and modern physics.

PHYS 7420 Energy Usage, the Environment and Sustainability (3,3,0)

This course allows students to comprehend the significance of energy sources, their capacity, security, costs and their effects on the environment. The energy production and economic distinction between non-renewable (e.g. coal, gas, oil and nuclear fuel) and renewable sources (e.g. wood, biomass, hydro, solar, wind, geothermal and ocean) upon amongst different countries will be explored. In addition, an examination on the role of nuclear energy and its concerns in radiation, spent fuel waste disposal and safety issue are addressed.

POLS 1110 Introduction to Research Methods (3,2,1)

This course is designed to enhance students' ability to perceive, evaluate and understand political phenomena through a systematic introduction to a wide range of approaches, methods and theories of political science. Basic research procedures and academic writing are the other foci of the course. Students are encouraged to analyse and explain the current political development of Europe, mainland China or Hong Kong with the help of particular perspectives and research methods. This course is open to GIS and European Studies majors only.

POLS 1120 Introduction to Political Economy (3,2,1)

Political economy, with its roots in the European 17th and 18th centuries, was the forefather of what developed in the 20th century into the two separate disciplines of political science and economics. However, it has remained as that discipline which examines the relationship of the individual to society, the economy, and the state. It is the study of relations and choices, of structures and institutions, of scales from the personal and local to the national, international, and global. Its originators include Locke, Hobbes, Adam Smith, Karl Marx, and Max Weber. Including choice theory and market theory, system theory, development theory and public policy theory, political economy examines the historic and human behavioural linkages among values/morals, politics, economic reality and economic reasoning. This course is open to GIS majors and GIS minors only.

POLS 1140 Political Movements: Chinese and European (3,2,1)

Prerequisite: POLS 1510 Foundations of Political Science or POLS 1520 Government and Politics of China (for GIS majors); or EURO 1111 Europe: Unity and Diversity (for European Studies majors)

The course examines three major political movements—nationalism, liberalism, and socialism—within a comparative

context. By “movement” is meant not solely an ideology, but an ideology in relation to concrete political developments and popular mobilization. European experience of the three movements will be compared and contrasted with Chinese experience. This course is open to GIS and European Studies majors only.

POLS 1150 Introduction to China Studies (1,0,0)

This one-unit course is designed specially for Year I China Studies students. It introduces students to the origin and development of China studies by examining the state of research and substantive knowledge in the field. It also introduces works by noted China-watchers or sinologists as well as publications by the teaching staff of China studies at the Hong Kong Baptist University, with an emphasis on the multidisciplinary nature of the field.

POLS 1510 Foundations of Political Science (3,2,1)

This is a first-year, first-semester course which introduces to students a comprehensive review of the field of political science. Basic concepts, political theories and methodologies, political institutions, political parties are all examined. The subfields of comparative politics and international relations are also integral parts of the course so as to lay down the foundation for further studies. Political developments in Europe and China are frequently employed as examples and related to the introduction of political ideas.

POLS 1520 Government and Politics of China (3,2,1)

An introductory course to the government and politics of contemporary China focusing on the historical development and institutionalization of Marxism-Leninism.

POLS 1530 Government and Politics of Hong Kong (3,2,1)

This course examines the development of politics and political institutions in Hong Kong from its colonial founding to the present. The institutional framework of politics in Hong Kong and the development of political culture in Hong Kong are introduced, and the outlines of Hong Kong's future relationship with China are explored with a focus on the Basic Law and the ongoing reforms leading up to the assumption of sovereignty by the People's Republic of China. This course is open to GIS majors and GIS minors only.

POLS 2110 Statistical and Survey Methods for Political Science (3,2,1)

Prerequisite: POLS 1510 Foundations of Political Science
The 20th century has been described as the age of statistics and modern political research increasingly demands familiarity with the means by which statistically based claims and policy decisions have been developed and advanced. Quantitative analysis also provides new means to describe and analyse social phenomena. In conjunction with qualitative and disciplinary approaches (i.e. historical, economic, psychological, sociological, etc.), quantitative analysis comprises an essential aspect of the discipline of political science. A key aspect of quantitative applications in the social sciences has been survey research, ranging from market research to opinion polling and quality of life surveys. This course provides an introduction to descriptive and inferential statistics and survey design, administration, analysis and theory. Critical understanding of the problems of analysis posed by quantitative databases, qualitative assessment and questionnaire development, and the proper presentation and explanation of quantitative data and its limitations provide primary purposes of the course. This course is open to GIS majors and GIS minors (Year II standing) only.

POLS 2130 Foundations of International Relations (3,2,1)

Prerequisite: EURO 1111-2 Europe: Unity and Diversity or POLS 1510 Foundations of Political Science

This is a second-year, first semester course which introduces students to the basic concepts, methods and processes of International Relations by focusing on four major “perspectives” that have framed analytical work in the field, namely “Realism-Power Politics”, “Dominance-Dependence”, “Transnationalism-

Interdependency” and “Cultural Interactionism”. International Relations seeks to build upon and integrate the disciplinary foundations students obtained in their first-year Political Science and Political Economy courses. It does this through a “levels of analysis” approach and through a problem-solving treatment of issues relevant, where possible, to Hong Kong's interaction with its own region and with other areas of the globe. This course is open to GIS, European Studies majors and GIS minors (Year II standing) only.

POLS 2140 Political Philosophy: Chinese and European (3,2,1)

Prerequisite: EURO 1111-2 Europe: Unity and Diversity or POLS 1510 Foundations of Political Science

The course is a study of the major political thinkers and issues in European and Chinese political philosophy. It will examine theories of the state, their development and their functions in both cultures, and compare the specific approaches of European and of Chinese thinkers to political issues in different periods of time. Special emphasis is put on the attempts to synthesize Chinese and European political thought in the first half of the 20th century. This course is open to GIS and European Studies majors only.

POLS 2160 European Politics and Society: French Political and Government System (3,2,1)

Prerequisite: EURO 1111-2 Europe: Unity and Diversity or POLS 1510 Foundations of Political Science

After a brief presentation of the legacy of the past (i.e. the French Revolution and the various regimes which followed), the core of the course is an examination of the evolution of the French political and governmental system from the unstable structures of the Fourth Republic to the more effective presidential regime that exists today. Basic concepts of political science, theories and methodologies acquired in POLS 1510 Foundations of Political Science are applied here to the study and analysis of one of the major nation states in Europe. This course is open to GIS and European Studies majors only.

POLS 2170 European Politics and Society: German Political Systems and Society (3,2,1)

Prerequisite: EURO 1111-2 Europe: Unity and Diversity or POLS 1510 Foundations of Political Science

Basic concepts of political science, theories and methodologies acquired in POLS 1510 Foundations of Political Science are applied here to the description and analysis of one of the major nation states in Europe. The course studies the structure of successive political systems in Germany within their historical context. Special emphasis will be placed on the post-war construction of a “social-constitutional state”, a “social market economy”, and the current multi-tiered political system of the Federal Republic of Germany. The course will finally examine united Germany's role in European and global politics. It prepares for POLS 3620 Contemporary Europe and Asia and EURO 3140 Current Issues of European Integration. This course is open to GIS and European Studies majors only.

POLS 2180 Government and Politics of the United States (3,2,1)

Prerequisite: POLS 1510 Foundations of Political Science
American Constitutionalism and the Bill of Rights (the first ten Amendments to the Constitution) comprise one of the major foundations of contemporary notions of modern, democratic government. This course examines the origins and development of US forms of government, federal and state, and also examines conflicts which have challenged, and continue to challenge, in some cases, the functioning of this system. This course is open to GIS majors and GIS minors (Year II standing) only.

POLS 2190 Government and Politics of the United Kingdom (3,2,1)

Prerequisite: EURO 1111-2 Europe: Unity and Diversity or POLS 1510 Foundations of Political Science

The British system of parliamentary government has exercised a profound influence throughout the world. This course examines