

**PHIL 600 CORE SEMINAR – Human Nature: Competing Philosophical Views (3 sem. hrs.)**

Examines some of the most influential views of human nature advanced by philosophers and scientists in the history of Western civilization, and to explore implications of these views for ethics, epistemology, and metaphysics. Plato and Aristotle are considered to have been seminal in shaping western views of human nature, and Christianity has drawn from ancient Greeks in articulating its own views. This backdrop to the modern period in philosophy is first examined before moving into seminal views advanced in modernity and postmodernity. Among the latter will be both philosophical views and scientific views on human nature, views held by Rationalists, Kantians, Empiricists, Darwinians, Behaviorists, Existentialists, Marxists, Freudians, Pragmatists, Evolutionary Psychologists, Post-structuralists, and Transhumanists.

**PHIL 603 Social Ethics Seminar (3 sem. hrs.)**

Examines ethical questions concerning life and death. Special emphasis is placed on understanding and evaluating moral and legal perspectives on these questions, within the larger tradition of Western philosophy, and in the face of the current technological revolution. Issues include: the moral status of humans, the meaning of personhood, sanctity of life versus quality of life, genetic engineering, reproductive technologies, euthanasia and physician-assisted suicide, abortion.

**PHIL 607 Special Topics in Philosophy (3 sem. hrs.)**

Topics may vary. Courses offered to date:

- Existence, Truth and Possibility
- Medieval Cosmology
- Neoplatonism and Early Christianity
- Empiricism
- Foundations of Ethics

**PHIL 610 Research Design/Seminar (3 sem. hrs.)**

Under the direction of the student's approved thesis advisor, a course of reading and study which leads to the development of both a significant bibliographical essay (or annotated bibliography) and a thesis proposal. The latter includes at least the following: major question(s) to be addressed; significance of the issue(s); methodologies to be used; theories to be addressed and primary sources to be examined.

**PHIL 611/612 Thesis (3 sem. hrs.; 3 sem. hrs.)****PHIL 613 Major Essay (3 sem. hrs.)**

Under the direction of a supervisor, students not doing a thesis research and write a major paper of approximately 10–15,000 words in length.

**PHIL 621 Philosophical Perspectives on Religious Pluralism**

This course surveys and engages central philosophical issues relevant to assessing normative religious pluralism.

**PHIL 645 Philosophy and Religion (3 sem. hrs.)**

Explores the foundations of religious belief and faith, particularly the issue of the rationality of religion. The role of methodology is examined, including the value of deductive, inductive, and abductive reasoning; also the question whether the method applicable to religious belief is unique to it. The work of recent philosophical theologians and their critics is examined and evaluated.

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## PHYSICS

**PHYS 111 Fundamentals of Physics I (3 sem. hrs.)**

The basic principles of Newtonian mechanics: three-dimensional kinematics, dynamics of particles and rigid bodies including work, energy, momentum, and rotational motion, simple harmonic motion and fluids.

Co-requisite: MATH 123.

Prerequisite(s): Physics 12. (Students without Physics 12 may take this course with instructor's consent.) (3-3; 0-0)

**PHYS 112 Fundamentals of Physics II (3 sem. hrs.)**

The basic principles of classical electromagnetism and waves: mechanical waves, Coulomb's law, electric fields, Gauss's law, Faraday's law, AC circuits, electromagnetic waves, geometrical optics.

Co-requisite: MATH 124.

Prerequisite(s): PHYS 111. (0-0; 3-3)

**PHYS 210 Conceptual Modern Physics (3 sem. hrs.)**

A survey of the development of scientific theories, emphasizing the ideas that emerged in physics in the 20th century. The course is designed so that general audience students become engaged with the conceptual aspects of topics in relativity and quantum mechanics.

*NB:* Not offered every year. See Department chair.

Prerequisite(s): Second year standing. (3-0; 0-0)

**PHYS 215 Stellar and Galactic Astronomy (3 sem. hrs.)**

An introduction to stellar and galactic astronomy, and to the tools and techniques of astronomy. Discussion of the types of stars and their formation, energy production, and end states; the nature of nebulae, star clusters, black holes, galaxies, and quasars; modern cosmology; astrobiology. Several daytime and night-time observation sessions are undertaken. Historical, philosophical, and Christian theological perspectives are considered.

*NB:* Not offered every year. See Department chair.

Prerequisite(s): Second year standing. (3-0; 0-0)

**PHYS 220 Mechanics (3 sem. hrs.)**

Topics in classical mechanics, including particle motion in three dimensions, noninertial reference frames, central forces, rigid body motion, Lagrange's equation of motion, and Hamilton's variational principle.

*NB:* Not offered every year. See Department chair.

Prerequisite(s): PHYS 111; MATH 223. (0-0; 3-0)

**PHYS 230 Electricity and Magnetism (3 sem. hrs.)**

Electric fields and potentials of static charge distributions, currents, magnetic fields and the vector potential, electromagnetic induction, electric and magnetic energy, electromagnetic properties of matter.

*NB:* Not offered every year. See Department chair.

Prerequisite(s): PHYS 112; MATH 223. (0-0; 3-3)

**PHYS 240 Physical Chemistry (3 sem. hrs.)**

Introduction to thermodynamics as applied to chemical reactions. The First and Second Laws of Thermodynamics, free energy and equilibria, phase equilibria and electro-chemistry.

*NB:* Not offered every year. See Department chair.

Cross-listed: CHEM 240.

Prerequisite(s): CHEM 111, 112; or CHEM 103, 112; or CHEM 103, 104 with instructor's consent; MATH 124. (3-4 or 3-4)

**PHYS 310 Topics in Modern Physics (3 sem. hrs.)**

Introduction to the special theory of relativity; the principles of quantum mechanics and its interpretation; aspects of atomic, nuclear and particle physics; cosmology.

*NB:* Not offered every year. See Department chair.

Prerequisite(s): PHYS 112; 210; MATH 223. (3-0 or 3-0)

**PHYS 320 Digital Electronics and Instrumentation (3 sem. hrs.)**

To provide students with a working knowledge of basic semiconductor devices and gates and their use for implementing logic devices and simple measurement and control functions, and to provide experience in constructing and using circuit diagrams and test/measurement equipment.

*NB:* Not offered every year. See Department chair.

Cross-listed: CMPT 320.

Prerequisite(s): CMPT 141; MATH 124; PHYS 230; or instructor's consent. (3-3 or 3-3)

**PHYS 322 Mathematical Methods of Physics (3 sem. hrs.)**

A study of more advanced methods for solving differential equations. Special emphasis is placed on applications in

physics. Topics include linear systems, non-linear systems, phase planes and stability, partial differential equations, Fourier series, Bessel and Legendre series, Sturm-Liouville problems, and orthogonal series.

*NB:* Not offered every year. See Department chair.

Cross-listed: MATH 322.

Prerequisite(s): MATH 321. (0-0; 3-0)

**PHYS 341 Advanced Physical Chemistry (3 sem. hrs.)**

The fundamental concepts of matter and its structure in relation to energy. Quantum mechanics, statistical thermodynamics, spectroscopy, kinetics, and the solid state.

*NB:* Not offered every year. See Department chair.

Cross-listed: CHEM 341.

Co-requisite: MATH 223.

Prerequisite(s): CHEM 240. (3-4; 0-0)

**PHYS 360 Optics (3 sem. hrs.)**

Geometrical and physical optics: reflection and refraction, interference, coherence, polarization, diffraction, lasers, and holography.

*NB:* Not offered every year. See Department chair.

Prerequisite(s): PHYS 230. (3-3 or 3-3)

**PHYS 400 Directed Studies in Physics (3 sem. hrs.)**

Students are required to produce an outline of one topic to be studied in consultation with the instructor. A course of reading and/or experimentation is pursued according to the approved outline. Assessment may be via examination and/or a final written report.

*NB:* This course can only be taken with instructor's consent.

Prerequisite(s): Advanced standing in Physics

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## POLITICAL STUDIES

**POLS 101 Introduction to Political Thinking (3 sem. hrs.)**

An introduction to the basic concepts, institutions, and ruling ideas in political thought and action.

Through the study of classic political texts, competing concepts like equality and freedom, justice and power, are introduced within the context of conflicting ideologies like liberalism, socialism, and conservatism. The meaning of citizenship in postmodern contemporary liberal democracies are examined and contrasted with competing visions of the good society.

Prerequisite(s): None. (3-0 or 3-0)

**POLS 211 International Politics (3 sem. hrs.)**

The ways in which states and other actors in the international system deal with each other: the evolution of the international system, the nature of foreign policy, the dynamics of international bargaining, and the changing role of force as an instrument of foreign policy. The contribution of international organizations, international law, political integration, and multilateral diplomacy to the creation of a more just international order.

Prerequisite(s): None. (3-0 or 3-0)

**POLS 234 Canadian Government and Politics in Comparative Perspective (3 sem. hrs.)**

Provides the student with an overview of the Canadian system of government in a comparative approach that includes study of British, American, and Canadian political and government institutions and practices. A comparative study of how basic concepts, principles, and institutions associated with different expressions of liberal-democratic governments highlight the diversity of political experience, reveal the interdependence of political systems and show the uniqueness of Canada's political system. Particular attention is given to the manner in which Parliament attempts to facilitate and develop public policy that reflects the diverse interests and aspirations of its citizens.

Cross-listed: SOCI 234.

Prerequisite(s): None. (3-0 or 3-0)

**POLS 250 Classical Political Philosophy (3 sem. hrs.)**

Examines the impact of Christianity on Western thought with respect to politics and political philosophy. It explores the unique encounter between "Jerusalem and Athens" that has been described as the "secret vitality of the West." Special attention is paid to the disagreement or conflict between a theological and philosophical approach to the study of political life.

Prerequisite(s): POLS 101. (3-0 or 3-0)

**POLS 305 Political Analysis (3 sem. hrs.)**

This course provides a survey of empirical research methods, especially qualitative and quantitative methods, used in descriptive and explanatory political analysis. The course work is oriented towards the practical use of these methods through such issues as research design in political analysis; the preparation of a literature review; the use of quantitative survey techniques and case studies methods; interviewing techniques; and the ethics of policy research.

Prerequisite(s): POLS 101; 211 or 234, or instructor's consent. (3-0 or 3-0)

**POLS 308 Political Economy of Developing Nations (3 sem. hrs.)**

This course provides an analysis of the relationship of government policies and economic development in selected Asian, African, and Latin American countries. Topics include the role of leadership and public policy; challenges of development; obstacles to democratization; and the interaction of domestic and global political/economic structures.

Prerequisite(s): POLS 101; 211, or instructor's consent. (3-0 or 3-0)

**POLS 310 Issues in Social Justice (3 sem. hrs.)**

An examination of ethical issues that pertain to social justice, addressing such topics as the distribution of wealth, affirmative action and quotas, sexual equality, gay rights, the morality of war, punishment, and responsibility.

Cross-listed: PHIL 310.

Prerequisite(s): 6 sem. hrs. of Political Studies including POLS 101, or instructor's consent. (3-0 or 3-0)

**POLS 312 Globalization and Global Governance (3 sem. hrs.)**

Examines the causes and consequences of globalization and the transitional institutions established to cope with this process. The course examines the meaning of global governance and how this differs from governance of domestic societies. It also identifies the significant international institutions involved in global governance and assesses their contribution. The role of various international governmental and non-governmental organizations are studied in relation to such issues as global trade, the environment, human rights, economic development, and international migration.

Prerequisite(s): POLS 101; 211, or instructor's consent. (3-0 or 3-0)

**POLS 314 International Political Economy (3 sem. hrs.)**

A study of the globalization of the world economy and the political factors that shape this process. Students become familiar with the recent history of international trade, global economic relations, and the role of various players in foreign economic policy making. Using case studies of representative governments, students explore models of fiscal and monetary policy and types of trade protection. Other topics include political factors affecting emerging and transitional economies, role of trade groupings, impact of multinational corporations, negotiations in the World Trade Organization, and the problems related to global industries such as airlines or oil.

Prerequisite(s): POLS 101; 211, or instructor's consent. (3-0 or 3-0)

**POLS 320 Social and Political Philosophy (3 sem. hrs.)**

An examination of foundational ideas and problems in political life and thought. Both classical and contemporary texts are used. Concepts treated include the state, the