910. Seminar
Fall, Winter, Spring. 1(1-0) May reenroll for a maximum of 3 credits. Approval of department.
Discussion of recent topics on pharmacology by departmental or outside speakers, or reporting of research efforts by graduate students of the Department of Pharmacology and Toxicology.

980. Problems
Fall, Winter, Spring. Summer. 2 to 5 credits. May reenroll for a maximum of 20 credits. Approval of department.
Limited work on selected research problems.

990. Doctoral Dissertation Research
Fall, Winter, Spring. Summer. Variable credit. Approval of department.
Individual work on research problems for the doctoral degree in pharmacology.

PHILOSOPHY

PHL

College of Arts and Letters

Each of the courses PHL 101, PHL 102, PHL 103 is an independent gateway to a major area of philosophy. Together they provide a comprehensive introduction to philosophical inquiry. The courses may be taken independently and in any order.

101. Introduction to Philosophy: Ethics and Value (A)
Fall, Winter, Spring, Summer. 3(3-0)
Students may not receive credit for both PHL 101 and PHL 330.
An inquiry into the nature of the right and the good, addressed to such fundamental problems as the objectivity of moral judgments, the criteria of right and wrong, and the grounds of moral responsibility.

102. Introduction to Philosophy: Knowledge and Reality (A)
Fall, Winter, Spring, Summer. 3(3-0)
An examination of such basic philosophical problems as free will and determinism, the existence of God, the relation of mind and body, and the scope and limits of human knowledge.

103. Introduction to Philosophy: Logic
Fall, Winter, Spring, Summer. 3(3-0)
An examination of deductive and inductive reasoning and of such topics as rational argumentation, fallacies, definition, meaning, truth, and evidence. Designed to improve students' capacities to read and think critically.

120. Classics of Philosophical Literature (A)
Fall, Winter, Spring. 4(4-0)
An introduction to contrasting classics of literary and philosophical importance. Primary texts from such philosophers as Plato, Lucretius, Descartes, Hume, Nietzsche, James, Russell and Sartre will be read and discussed.

200H. Honors Work
Fall, Winter, Spring. 1 to 16 credits. Approval of department.

Taken together, PHL 211, PHL 212 and PHL 213 provide a comprehensive introduction to the history of Western philosophy. It is recommended that these courses be taken in sequence. However, if only one course is taken, it may be any one of these, since each course is self-contained and may be taken independently of the others.

211. Ancient Philosophy (A)
Fall, Winter, Spring. 3(3-0)
An introduction to the history of philosophy: the Greek and Roman periods, with emphasis on Plato and Aristotle.

212. Medieval and Early Modern Philosophy (A)
Winter, Spring. 3(3-0) PHL 211 recommended.
An introduction to the history of philosophy: the Middle Ages to the rise of modern science, with emphasis on Aquinas, Descartes, Spinoza and Leibniz.

213. Modern Philosophy (A)
Fall, Spring. 3(3-0) PHL 212 recommended.
An introduction to the history of philosophy: the Enlightenment to the nineteenth century, with emphasis on Hume and Kant and such other philosophers as Locke, Berkeley, Hegel, Kierkegaard and Nietzsche.

294. Special Topics
Fall, Winter, Spring. 2(2-0) to 8(6-0) May reenroll for a maximum of 12 credits if different topics are taken. Approval of department.
Intensive study of some particular problem or author in philosophy.

311. Indian Philosophy
Fall, Winter. 3(3-0)
Metaphysical ethical and social theories developed within major Indian philosophical systems: e.g., philosophical Buddhism, Vedanta, Vedantic transcendentalism, Samkhya dualism, and the Realist schools.

312. Chinese Philosophy
Spring. 3(3-0)
Comparative moral philosophy of Confucianism, Taoism, and Buddhism and their metaphysical and cultural roots. Concepts of enlightenment and human nature.

315. American Philosophy
Spring of odd-numbered years. 3(3-0)
Three credits in philosophy or approval of department. Examination of such thinkers as Royce, James, Dewey, Whitehead and Santayana, illustrating classic American contributions to philosophy.

323. Existentialism
Fall, Winter, Spring. 3(3-0) Three credits in philosophy or approval of department.
Such authors as Husserl, Jaspers, Kierkegaard, Marcel, Nietzsche, Sartre and such topics as hope, anxiety, bad faith, subjectivity, freedom, social being, and phenomenological method.

330. Elements of Ethics
Fall, Winter, Spring. 3(3-0) Juniors. Students may not receive credit for both PHL 101 and PHL 330.
An inquiry into the nature of the right and the good, addressed to such fundamental problems as the objectivity of moral judgments, the criteria of right and wrong, and the grounds of moral responsibility.

337. Logic I
Fall, Winter, Spring. 4(4-0)
Modern symbolic methods in deductive reasoning. The logic of compound and general sentences.

338. Logic II
Winter, Spring. 4(4-0) PHL 337 or approval of department.
The logic of identity, functions and definitions. The axiomatic method and its applications.

340. Moral Problems in Medicine and the Life Sciences
Fall, Winter, Spring. 4(4-0) Juniors.
Philosophical aspects of euthanasia, allocation of scarce medical resources, experimentation, and informed consent, truth-telling and the doctor-patient relationship, genetic counseling, genetic engineering, behavior control, and health care delivery.

341. Philosophical Aspects of Feminism
Fall, Winter, Spring. 4(4-0)
Conceptual issues in feminist theory. Such concepts as oppression, sexism and chauvinism, feminist separatism, respect and self-respect, personhood, power and control and feminism will be analyzed and explored.

342. Philosophy of the Counter Culture
Fall. 3(3-0)
Students will examine counter cultural critiques of contemporary culture and values; and develop articulate, defend their own views on such issues, especially as those issues immediately affect their own lives.

343. Ethical Issues in the Social Sciences
Winter. 3(3-0)
Philosophical treatment of ethical issues arising from the social scientists' conflicting obligations to their subjects, science, profession, career, personal values and society.

350. Philosophy of Art
Fall, Winter, Spring. 3(3-0) Three credits in philosophy or 6 credits in art, music, or literature.
Inquiry into the principles of artistic activity made with a view to determining the conditions under which art is produced, the nature of its product and the sources of its value.

351. Contemporary Aesthetic Theory
Winter. 3(3-0) Three credits in philosophy or 6 credits in art, music, or literature.
Critical examination of contemporary theory in aesthetics and the philosophy of art, in which the primary categories of reflection upon the arts have gained their currency. Readings from such authors as Tolstoy, Santayana, Croce, Bulloch, Freud, Parker, Prall, Greene.

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355. Philosophy of Religion
Fall, Winter, Spring, 3(3-0) Three credits in philosophy or 6 credits in religious studies or approval of department.
Alternative philosophical approaches to religion as a personal and social phenomenon. Contemporary problems of meaning, evidence, and obligation in relation to religious beliefs and practices.

360. Philosophy of Law
Fall, Winter, Spring, 3(3-0) Three credits in philosophy or 6 credits in political science or approval of department.
Philosophic examination of such legal concepts as punishment, responsibility, rights and duties, and administered by Lyman Briggs School. Is our technology desirable? Are its social forms desirable? What alternatives are there? Students will develop and defend their own appraisals of technology.

361. Philosophy of Technology
Fall, Winter, Spring, 3(4-0) Sophomore or approval of department. Interdepartmental with and administered by Lyman Briggs School.
Is our technology desirable? Are its social forms desirable? What alternatives are there? Students will develop and defend their own appraisals of technology.

365. Social and Political Philosophy
Fall, Winter, Spring, 3(3-0) Three credits in philosophy or 6 credits in political science, or approval of department.
Philosophical justifications for political authority and individual liberty. Consideration of such theories as natural law, social contract, utilitarianism, and historicism.

366. The Philosophy of Karl Marx
Spring, 4(4-0) Three credits in philosophy or approval of department.
Structural aid and alienation; its application to the religious, philosophical, political, social, and economic spheres; reform of the Hegelian dialectic.

370. Philosophy of Language
Fall, Winter, Spring, 3(3-0) Three credits in philosophy or approval of department.
An elaboration of elementary topics in semantics and philosophy of language, including such topics as meaning, denotation, and truth.

380. The Nature of Science
Fall, Winter, Spring, 3(3-0) One course in the biological, physical, or mathematical sciences.
Conflicting views about science. Such topics as: scientific methodology, the objectivity of science, the presuppositions, goals, and limits of science.

381. Science, Values, and Decision Making
Winter, Spring, 3(3-0) One course in the biological, physical, or mathematical sciences.
Issues concerning science and man. Such topics as: the value neutrality of science, science and ideology, science and decision making, the scientific predictability of human actions.

390. Philosophy in Literature (A)
Spring, 3(4-0) Juniors.
Philosophical problems found in such writers as Goethe, Dostoevsky, Tolstoy, Mann, Hesse, and Camus.

400H. Honors Work
Fall, Winter, Spring. Variable credit. Approval of department.
Individually selected program of supervised group or individual study dealing with some phase of philosophy.

410. Plato
Fall, Winter, Spring, 4(4-0) or 9 credits in philosophy or approval of department.
The most important Socratic dialogues, including the 'Republic' and the dialogues of the early Academy.

411. Aristotle
Winter, 4(3-0) PHL 211 or PHL 410 or 9 credits in philosophy or approval of department.
Introduction to the philosophy of Aristotle. Readings from the texts of Aristotle and lectures on his philosophy with emphasis on his logical, epistemic, and metaphysical inquiries.

412. Aristotle's Moral and Political Philosophy
Spring of even-numbered years, 4(3-0) PHL 211 or PHL 411 or 9 credits in philosophy or approval of department.
Such topics as: happiness as the supreme good; practical virtue and the middle way; morality as rational, political foundations; the social role of women, children, and slaves.

413. Continental Rationalism
Fall of odd-numbered years, 5(4-0) PHL 212 or 9 credits in philosophy or approval of department.
The rationalists of the seventeenth century, with emphasis on Descartes, Spinoza, and Leibniz.

414. Medieval Philosophy
Spring of odd-numbered years, 4(3-0) PHL 211 or PHL 212 or PHL 411 or 9 credits in philosophy, or approval of department.
Significant philosophers and philosophical problems of the Medieval period.

416. British Empiricism
Fall of even-numbered years, 5(4-0) PHL 212 or PHL 213 or 9 credits in philosophy or approval of department.
The development of the philosophical school of British Empiricism, with emphasis on the writings of Locke, Berkeley, and Hume.

419. Nineteenth Century Philosophy
Fall, Winter, Spring, 4(4-0) PHL 213 or PHL 423 or 9 credits in philosophy or approval of department.
Significant philosophical developments in the 19th century thought, with emphasis on post-Kantian idealism.

420. Analytic Philosophy, 1900-1945
Fall, Winter, Spring, 4(3-0) Three credits in philosophy at the 300 level or higher or 9 credits in philosophy or approval of department.
Issues in the works of such philosophers as Frege, Russell, Moore, Wittgenstein, and Carnap. Will provide a background for recent analytic philosophy.

421. Formal Linguistic Analysis
Winter of odd-numbered years, 4(3-0) PHL 337, PHL 420 or approval of department.
Issues in the works of such philosophers as Quine, Goodman, and Bourgmann.

422. Non-Formal Linguistic Analysis
Winter of even-numbered years, 4(3-0) PHL 420. Issues in the works of such philosophers as Wittgenstein, Ryle, Austin, and Strawson.

423. Kant
Winter, 4(4-0) PHL 213 or 9 credits in philosophy or approval of department.
Kant's metaphysical and epistemological system as expressed in the 'Critique of Pure Reason.'
447. Philosophy of Mind

Winter, Spring. 4(3-0) Three credits in philosophy at 300 level or higher or 9 credits in philosophy or approval of department. Examines classical and contemporary treatments of such concepts as mind, self, intentionality, mental act, and associated problems (the body-mind relation, 'thinking' machines, the connection of thought with action, etc.).

450. History of Aesthetics Theory

Spring. 4(3-0) Three credits in philosophy at 300 level or higher or 9 credits in philosophy or 9 credits in art, music or literature or approval of department. Poetics of Aristotle, and the tradition which it has generated. Critical reflection on theory of poetry, the drama, and fine arts.

460. Moral and Political Issues

Fall, Spring. 4(3-0) Three credits in philosophy at 300 level or higher or 9 credits in philosophy, or approval of department. Philosophical aspects of such issues as freedom of speech and action, moral handicaps, right and wrong, war, peace and justice, equality, human rights and punishment.

461. Ethical Issues In Nursing

Winter. 2(2-0) PHL 340 or approval of instructor. Application of ethical analysis, principles, and reasoning to such topics as self-determination, truthfulness, coercion, confidentiality, and autonomy in the nursing context.

471. Philosophy of Mathematics

Spring. 4(4-0) PHL 337 or LBS 372 or MTH 471 or approval of department. An analysis of the nature of mathematical truth. The theories of logicism, formalism, intuitionism, and conventionalism are critically examined.

480. The Nature of Scientific Theory and Explanation

Winter. 4(3-0) PHL 337 or approval of department. Topics such as: the logical structure of scientific theories, empirical meaningfulness and testability, deductive and probabilistic explanation, prediction.

481. Foundations of Scientific Inference

Spring. 4(3-0) PHL 337 or approval of department. Topics such as: discovery vs. validation of theories, probability, induction and confirmation theory.

484. Philosophy of Biological Sciences

Winter, Spring. 4(4-0) Nine credits in science or approval of department. Interdepartmental and administered by Lyman Briggs School. Methodological notions and problems of the biological sciences such as: observation and measurement, classification, teleological and functional explanation, teleological systems, emergentism, vitalism, value neutrality.

485. Philosophy of the Social Sciences

Spring. 4(3-0) Three credits in philosophy at 300 level or higher or 9 credits in philosophy or 9 credits in social science or approval of department. Selected topics in the methodology of the behavioral sciences, including such topics as: concept formation and theory construction, explanation and insight, subjectivity and value judgements, emergence and teleology, historicism, reductionism, measurement, and statistical inference.

490. Individual Reading

Fall, Winter, Spring, Summer. 1 to 4 credits. May re-enroll for a maximum of 12 credits. Approval of department. Supervised reading on a particular author or topic.

494. Special Topics

Fall, Winter, Spring. 2(2-0) to 8(6-0) May re-enroll for a maximum of 12 credits if different topics are taken. Approval of department. Intensive study of some particular problem or author in philosophy.

495. Proseminar

Winter, Spring. 1 credit. May re-enroll for a maximum of 4 credits. Juniors. Fifteen credits in philosophy or approval of instructor. Each section will examine a particular topic or author. Emphasis on discussion of student papers.

805. Business Ethics

Spring. 4(4-0) Graduate student in the College of Business or approval of instructor. Interdepartmental with the Department of General Business-Business Law Programs. Ethical dimensions of such topics as corporate responsibility, preferential hiring, profit and taxation, deception and bribery, self-regulation versus government regulation, 'case-studying', and advertising. Readings from philosophical and business sources.

825. Seminar in the History of Philosophy

Fall, Winter, Spring. 4(3-0) May re-enroll for a maximum of 12 credits. Approval of department.

830. Seminar in Ethics

Winter. Spring. 4(3-0) May re-enroll for a maximum of 12 credits. Approval of department.

837. Seminar in Logic

Fall. 4(3-0) May re-enroll for credit. Approval of department.

841. Seminar in Epistemology

Fall, Winter, Spring. 4(3-0) May re-enroll for a maximum of 12 credits. Approval of department.

845. Seminar in Metaphysics

Fall, Winter, Spring. 4(3-0) May re-enroll for a maximum of 12 credits. Approval of department.

850. Seminar in Aesthetics

Fall. 4(3-0) May re-enroll for a maximum of 12 credits. Approval of department. The nature of aesthetic values, grounds of criticism, function of the arts, etc.

860. Seminar in Social Philosophy

Spring. 4(3-0) May re-enroll for a maximum of 12 credits. Approval of department. Philosophy of law and of the state.

870. Seminar in the Philosophy of Language

Fall. 4(3-0) May re-enroll for a maximum of 12 credits. Approval of department. Concrete bases of language and nature of meaning.

880. Seminar in Philosophy of Science

Fall, Winter. 4(3-0) May re-enroll for a maximum of 12 credits. Approval of department.

890. Graduate Reading Course

Fall, Winter, Spring, Summer. 1 to 10 credits. May re-enroll for credit. Approval of department. Supervised reading course for advanced graduate students for more thorough investigation of special fields.

899. Master’s Thesis Research

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

999. Doctoral Dissertation Research

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

PHYSICAL SCIENCE

College of Natural Science

The content of 405, as well as the problems course, may vary from term to term. Brochures giving detailed information about individual courses are available in the College of Natural Science and the Office of the Assistant Dean for Lifelong Education. These courses are primarily designed for in-service teachers and interested adults and are offered in off-campus locations.

205. Foundations of Physical Sciences

Fall, Winter, Spring, Summer. 4(3-3) 12 credits of Natural Science. An introduction to physical science for non-science majors. Emphasis on basic concepts relating to human interaction with the physical environment. Topics selected from physics, chemistry, and the earth and space sciences.

405. Topics in Physical Science

Fall, Winter, Spring. Summer. 1 to 3 credits. May re-enroll for a maximum of 6 credits if different topic is taken. Approval of department. Presentation of single topics from the physical sciences by senior faculty and guest lecturers. Topics are selected to facilitate development of strong physical science programs in schools.

430. Planetarium and Classroom Instruction

Summer. 4(3-2) AST 119 or AST 217 or AST 229. Practical operation, techniques, and methods of instruction for astronomy and other sciences in the planetarium theater and the classroom.

431. Problems in Planetarium Education

Fall, Winter, Spring. 1 to 3 credits. May re-enroll for a maximum of 6 credits. Approval of department. Individual study, training, or project under the direction of a faculty member. Often the training will be in the area of actual delivery of planetarium presentations.

890. Problems in Physical Science

Fall, Winter, Spring, Summer. 1 to 12 credits. May re-enroll for a maximum of 15 credits. Bachelor’s degree in a physical science.