College of Arts and Letters

Each of the courses PHL 101, PHL 102, and 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.

PHILOSOPHY

PHL

821. Advanced General Pharmacology  
Winter. 3(2-2) PHM 520, PHM 820; PHM 521 or concurrently. 
This course complements PHM 521 (Pharmacodynamics) with increased coverage of toxicology, chemotherapy (antibiotic, anticancer, and antiparasitic) and central nervous system drugs, including narcotic analgesics and psychoactive agents.

839. Systems Neuroscience  
Winter of odd-numbered years. 5(4-2) 
Approval of department. Interdepartmental with the departments of Anatomy, and Physiology. Administered by the Department of Anatomy. Physiology, anatomy and pharmacology of sensory, somatomotor and autonomic neural systems.

841. Advanced Endocrine Physiology and Pharmacology  
Fall of odd-numbered years. 5(6-0) PSL 500E or approval of course coordinator. Interdepartmental with and administered by the Department of Physiology. Basic and advanced physiologic and pharmacologic concepts of general endocrinology including reproductive endocrinology.

870. Problems  
Fall, Winter, Spring, Summer. 2 to 4 credits. May reenroll for a maximum of 12 credits. Approval of department. Limited amounts of individual work on selected research problems for first year graduate students in the Department of Pharmacology and Toxicology.

899. Master's Thesis Research  
Fall, Winter, Spring, Summer. Variable credit. Approval of department. Individual work on research problems for the master's degree in pharmacology.

910. Seminar  
Fall, Winter, Spring. 1(1-0) May reenroll for a maximum of 5 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.

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

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.

312. Chinese Philosophy  
Spring. 3(3-0) Comparison of Chinese 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, Pierce, 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(4-0) 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 criterion 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. 4(4-0) Juniors. Philosophical aspects of eugenics, 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, rape, respect and self-respect, personal identity, power, 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 these 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.

344. Ethical Issues in Nursing (PHL 481)  
Winter. 3(2-0) PHL 340 or approval of instructor. Application of ethical analysis, principles, and reasoning to such topics as professional, truthfulness, coercion, confidentiality, and autonomy in the nursing context.
345. Business Ethics
Fall, 4(4-0) Juniors. Interdepartmental
with General Business—Business Law Pro-
grams.
Ethical dimensions of the relationships be-
tween business and employees, consumers, other
businesses, society, government, and the law.
Readings from philosophical and business
sources.

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.

355. Philosophy of Religion
Spring. 3(3-0) Three credits in philoso-
phy or 6 credits in religious studies or approval of
department.
Alternative philosophical approaches to religion
as a personal and/or social phenomenon. Con-
temporary 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 sci-
ence or approval of department.
Philosophic examination of such legal concepts
as punishment, responsibility, rights and duties,
judical decisions and justice; and such legal the-
ories as natural law, positivism and realism.

361. Philosophy of Technology
Fall, Winter. 4(4-0) Sophomores 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. 3(3-0) Three credits in
philosophy or 6 credits in political science, or
approval of department.
Philosophical justifications for political author-
ity and individual liberty. Consideration of such
theories as natural law, social contract, utilitarian-
ism and historicism.

366. The Philosophy of Karl Marx
Spring. 4(4-0) Three credits in philoso-
phy or approval of department.
Structural and critical analysis of Karl Marx's phenom-
ological thought. Theory of objectification and
alienation; its application to the religious, philosop-
ical, political, social, and economic spheres; reform of the Hegelian dialectic.

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

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

381. Science, Values, and Decision
Making
Winter, Spring. 3(3-0) One course in
the biological, physical or mathematical sci-
ences.
Conflicting views of science and values. 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(3-0) Juniors.
Philosophical problems found in such writers as
Goethe, Dostoevsky, Tolstoy, Mann, Hesse,
Camus.

400H. Honors Work
Fall, Winter, Spring. 1 to 5 credits.
May enroll for a maximum of 10 credits.
Approval of department.
Individually selected program of supervised
or individual study dealing with some
phase of philosophy.

410. Plato
Fall. 4(4-0) PHL 211 or 9 credits in philo-
osophy or approval of department.
The most important Socratic dialogues, includ-
ing the "Republic" and the dialogues of the early
Academy.

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

412. Aristotle's Moral and Political
Philosophy
Spring of even-numbered years. 3(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. 4(4-0)
PHL 212 or 9 credits in philosophy or approval
of department.
The rationalism of the seventeenth century, with
emphasis on Descartes, Spinoza and Leibniz.

414. Medical Philosophy
Spring of odd-numbered years. 4(4-0)
PHL 211 or PHL 212 or PHL 411 or 9 credits in
philosophy or approval of department.
Significant philosophers and philosophical prob-
lems of the medieval period.

416. British Empiricism
Fall of even-numbered years. 4(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. 4(4-0) PHL 213 or PHL 423 or 9
credits in philosophy or approval of department.
Significant philosophical developments in 19th
century thought, with emphasis on post-Kantian
idealism.

420. Twentieth Century Analytic
Philosophy
Fall. 4(4-0) Three credits in philosophy
at the 300 level or higher or 9 credits in philoso-
phy or approval of department.
Issues in the works of such philosophers as Frege,
Moore, Wittgenstein, Carnap, Quine, Goodman,
Austen, Strawson, and Kripke.

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."

424. Contemporary Continental
Philosophy
Winter. 4(4-0) Three credits of philo-
osophy at the 300 level or higher or approval
of department.
Typical areas of study are phenomenology,
structuralism, contemporary interpretation of
Marx, hermeneutic (Gadamer), critique of instru-
mental reason (Horkheimer, Adorno, Habermas)
ontologies of the person.

427. Hegel
Spring. 4(4-0) PHL 213 or PHL 423 or
9 credits in philosophy or approval of depart-
ment.
Introduction to Hegel's dialectic and system
through selections from major works. The prob-
lem of historically concrete philosophy and
implications for science, politics, art, and reli-
gion.

428. Special Topics in Existentialism
Spring. 4(4-0) PHL 323 or approval of
department.
An examination of existentialist thought in terms of
a single author or topic.

431. Modern Ethical Theories
Fall. 4(4-0) 3 credits in philosophy at
the 300 level or higher or approval of depart-
ment.
Study of some of the important writers and prob-
s in moral philosophy since the seventeenth
century.

432. Contemporary Ethical Theories
Winter. 4(4-0) PHL 431 or 9 credits in
philosophy or approval of department.
Study of some of the leading contemporary views
of the nature of moral language and conscious-
ness.

436. Philosophical Logic
Winter. 4(4-0) May enroll for a maxi-
 mum of 8 credits if different topic is taken. PHL
337 or approval of department.
Such topics as metatheory, model theory, artifi-
cial intelligence and dovient logics, e.g., logic of
existence, intuitionist logic, many valued logic.

440. Epistemology
Fall of even-numbered years. 4(4-0)
Three credits in philosophy at 300 level or higher
or 9 credits in philosophy or approval of depart-
ment.
Study of evidence, grounds of assent, conviction,
belief, and certainty.

445. Metaphysics
Fall of odd-numbered years. 4(4-0)
Three credits in philosophy at 300 level or higher
or 9 credits in philosophy or approval of depart-
ment.
Fundamental concepts and categories in meta-
physics: substance, process, cause, universal,
particular, space, time, endurance, eternity,
change, and value.
447. Philosophy of Mind
Winter, Spring. 4(4-0) 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. Emphasis on the body-mind relation, "thinking" machines, the connection of thought with action, etc.

460. Moral and Political Issues
Fall, Spring. 4(4-0) 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, civil disobedience, violence, war, justice and equality, human rights and punishment.

480. The Nature of Scientific Theory and Explanation
Winter. 4(4-0) 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(4-0) 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 with 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(4-0) Three credits in philosophy at 300 level or higher or 9 credits in philosophy or 9 credits, other than those in social science or approval of department. Selected problems in the methodology of the behavioral sciences, including such topics as concept formation and theory construction, explanation and insight, subjectivity and value judgments, emergence and teleology, historicism, reductionism, measurement, and statistical inference.

490. Individual Reading
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 12 credits. Approval of department. Supervised reading on a particular author or topic.

494. Special Topics (MTC)
Fall, Winter, Spring. 2(2-0) to 6(0-6) 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.

495. Proseminar
Winter, Spring. 1 credit. May reenroll for a maximum of 4 credits. Junior. 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 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, "whistleblowing", and advertising. Readings from philosophical and business sources.

825. Seminar in the History of Philosophy
Fall, Winter, Spring. 2 to 4 credits. May reenroll for a maximum of 12 credits. Approval of department.

830. Seminar in Ethics
Winter, Spring. 2 to 4 credits. May reenroll for a maximum of 12 credits. Approval of department.

837. Seminar in Logic
Fall, Winter, Spring. 2 to 4 credits. May reenroll for a maximum of 12 credits. Approval of department.

841. Seminar in Epistemology
Fall, Winter, Spring. 2 to 4 credits. May reenroll for a maximum of 12 credits. Approval of department.

845. Seminar in Metaphysics
Fall, Winter, Spring. 2 to 4 credits. May reenroll for a maximum of 12 credits. Approval of department.

890. Seminar in Social Philosophy
Spring. 2 to 4 credits. May reenroll for a maximum of 12 credits. Approval of department.

894. Seminar in the Philosophy of Language
Fall. 2 to 4 credits. May reenroll 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. 2 to 4 credits. May reenroll for a maximum of 12 credits. Approval of department.

999. Doctoral Dissertation Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

PHILOSOPHY

College of Natural Science

The content of 405, as well as the problems course, 890, 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.

203. Foundations of Physical Science
Fall, Winter, Spring, Summer. 4(3-3) 12 credits in 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.

480. Topics in Physical Science
Fall, Winter, Spring. 1 to 3 credits. May reenroll 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.

490. Problems in Physical Science
Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 15 credits. Bachelor's degree in a physical science.

PHYSICS AND ASTRONOMY

College of Natural Science

Physics

Introductory physics courses are offered in both the lecture-recitation and the Coiffered-Instructional (CBI) format. In the latter format the students are carefully guided through each course via written materials with ample consulting time available. Both content and pace of course are flexible to suit student's needs and interests, final grades being based on total amount of material for which student's mastery is certified. The introductory courses may be grouped by the application of two criteria: The interests of the students the courses are designed to serve and the method of instruction employed.

Lecture-Recitation Format
223, 237, 238, 239, three credits each, designed primarily for students with interests in the life and earth sciences. The mathematics prerequisite is credit for or concurrent enrollment in college algebra and trigonometry (MTH 109 or 111).

257, 258, 259, four credits each, designed primarily for Physics majors and others with a special interest in Physics. The mathematics prerequisite is credit for or concurrent enrollment in calculus III with vectors (MTH 214).

277, 287, 288, 289, four credits each, designed primarily for Physics majors and others with a special interest in Physics. The mathematics prerequisite is credit for or concurrent enrollment in calculus III with vectors (MTH 214), the Honors section recommended.