

**Descriptions—Pediatrics
of
Courses**

620. Directed Studies
Fall, Spring, Summer. 1 to 30 credits. A student may earn a maximum of 30 credits in all enrollments for this course.
P: PED 600. R: Open only to graduate-professional students in the College of Osteopathic Medicine. Approval of department.
Study in general or specialty pediatrics.
QA: PED 620

**PHARMACOLOGY AND
TOXICOLOGY PHM**

College of Human Medicine
College of Osteopathic Medicine
College of Veterinary Medicine

350. Introductory Human Pharmacology
Fall, Spring. 3(3-0)
P: PSL 250. R: Not open to freshmen.
General principles of pharmacology. Central and autonomic nervous systems. Cardiovascular and renal drugs. Chemotherapy. Anti-infective drugs and endocrine agents.
QA: PHM 350

430. Drug Abuse
Fall of odd-numbered years. 3(3-0)
R: Not open to freshmen and sophomores.
Pharmacology, physiology, and neuroscience related to the pharmacodynamics of drugs of abuse.
QA: PHM 430

450. Introduction to Chemical Toxicology
Spring. 3(3-0)
P: BS 110, BS 111, CEM 251. R: Not open to freshmen and sophomores.
Mammalian toxicology. Disposition of chemicals in the body, detoxication, elimination, and mechanisms of toxicity in major organ systems. Selected toxic agents.
QA: PHM 450

480. Special Problems
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 9 credits in all enrollments for this course.
R: Approval of department. Not open to students with credit in PHM 350 or PHM 430.
Individual work on selected research problems.
QP: PHM 350, PHM 430 QA: PHM 480

554. Veterinary Pharmacology and Toxicology I
Fall. 3(3-0)
R: Completion of the first year of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in PHM 556.
Drug absorption, distribution, biotransformation, elimination, receptor theory and pharmacogenetics. Chemical toxicity. Autonomic nervous system, cardiovascular and renal pharmacology.
Temporary approval effective from Fall Semester 1992 through Spring Semester 1993.
QA: PHM 554

555. Veterinary Pharmacology and Toxicology II
Spring. 4(4-0)
R: Completion of the first year of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in PHM 556.
Endocrine, autocrine and central nervous system pharmacology. Chemotherapy. Antimicrobials, antihelminthics, and antineoplastics.
Temporary approval effective from Fall Semester 1992 through Spring Semester 1993.
QA: PHM 555

556. Veterinary Pharmacology
Fall. 5(5-0)
R: Completion of 2 semesters of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in PHM 554 or PHM 555.
Drug absorption, disposition, biotransformation, excretion, pharmacokinetics. Pharmacologic agents of the autonomic nervous, cardiovascular, renal, central nervous, endocrine, and gastrointestinal systems.

557. Veterinary Toxicology
Spring. 2(2-0)
R: Completion of 3 semesters of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in PHM 594.
Determinants of toxic responses, analytical toxicology, genetic toxicology, and toxin management. Diagnosis, prevention, and treatment of common toxicoses.
QA: PHM 594

563. Medical Pharmacology
Summer. 3(3-0)
R: Graduate-professional students in colleges of Human and Osteopathic Medicine.
General principles of pharmacology and selected drugs. Rational drug therapy.

594. Veterinary Toxicology
Spring. 3(3-0)
R: Completion of the second year of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in PHM 557.
Pharmacological basis and pathological features of animal diseases caused by common toxic chemicals. Clinical manifestations, diagnosis, prevention, and treatment.
Temporary approval effective from Fall Semester 1992 through Spring Semester 1993.
QA: PHM 594

658. Research Problems in Pharmacology and Toxicology
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
R: Completion of 4 semesters of the graduate-professional program in the College of Veterinary Medicine. Approval of department.
Selected research problems in pharmacology or toxicology.
QP: PHM 554, PHM 555, PHM 594

810. Synaptic Transmission
Spring of even-numbered years. 3(3-0)
R: Approval of department.
Chemical and electrical aspects of nerve impulse transmission at synaptic and neuroeffector junctions. Influence of drugs.
QA: PHM 810

813. Cardiac Pharmacology
Spring of odd-numbered years. 3(3-0)
P: PHM 820. R: Open only to graduate students. Approval of department.
Effects of drugs on normal physiological and biochemical processes in cardiac cells.
QA: PHM 813

814. Advanced Principles of Toxicology
Spring of odd-numbered years. 3(3-0)
P: PHM 819.
Biochemical, molecular and physiological mechanisms of toxicology. Responses of major organ systems to chemical insult. Mechanisms of mutagenesis and carcinogenesis.
QA: PHM 814

815. Concepts in Tumorigenesis
Spring of even-numbered years. 2(2-0)
P: BCH 462, PSL 432, PSL 460. R: Approval of department.
Examination and discussion of literature in tumorigenesis.
QP: PSL 433, BCH 453 QA: PHM 815

819. Principle of Drug-Tissue Interactions
Summer. 5(5-0)
R: Open only to graduate students. Approval of department.
General principles relevant to the interaction of chemicals with biological systems.
QA: PHM 819

820. Drug Actions, Effects and Uses
Fall. 5(5-0)
P: PHM 819. R: Open only to graduate students. Approval of department.
Major principles of physiological and biochemical actions of major drugs.
QA: PHM 820, PHM 821

870. Research Rotation
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
R: Open only to first year graduate students in Pharmacology and Toxicology. Approval of department.
Individual work on selected research problems.
QA: PHM 870

899. Master's Thesis Research
Fall, Spring, Summer. 1 to 8 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
R: Open only to graduate students in Pharmacology and Toxicology. Approval of department.
QA: PHM 899

910. Seminar
Fall, Spring. 1(1-0) A student may earn a maximum of 3 credits in all enrollments for this course.
R: Open only to graduate students. Approval of department.
Discussion of recent topics in pharmacology and toxicology by faculty or invited outside speakers. Students research reports.
QA: PHM 910

980. Problems
Fall, Spring, Summer. 2 to 5 credits. A student may earn a maximum of 20 credits in all enrollments for this course.
R: Open only to graduate students. Approval of department.
Limited work in selected research projects.
QA: PHM 980

999. Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 36 credits in all enrollments for this course.
R: Open only to graduate students in Pharmacology and Toxicology. Approval of department.
QA: PHM 999

PHILOSOPHY PHL

Department of Philosophy
College of Arts and Letters

130. Logic and Reasoning
Fall, Spring. 3(3-0)
R: Not open to students with credit in PHL 330.
Deductive and inductive reasoning. Topics such as rational argumentation, fallacies, definition, meaning, truth and evidence. Techniques for critical reading and thinking.
QA: PHL 103

200. Introduction to Philosophy
Fall, Spring. 3(3-0)
Theories of knowledge, values, and reality. Topics such as objectivity, relativism and cultural diversity, moral responsibility, aesthetic values, the self, existence of God, free will, minds and machines.
QA: PHL 101, PHL 102, PHL 330

210. History of Western Philosophy: Ancient and Medieval
Fall. 3(3-0)
Greek philosophy with emphasis on Plato and Aristotle; Roman philosophy; and medieval philosophy.
QA: PHL 211

- 211. History of Western Philosophy: Modern**
Spring, 3(3-0)
P: PHL 210 recommended.
Philosophy from the Renaissance through the nineteenth century, with emphasis on such philosophers as Descartes, Spinoza, Locke, Hume, Kant, Hegel, Kierkegaard and Nietzsche.
QA: PHL 213
- 312. Chinese Philosophy**
Spring, 3(3-0)
R: Not open to freshmen and sophomores.
Central traditions in the history of Chinese philosophy: Confucianism, Taoism, Chan Buddhism, Neo-Confucianism.
QA: PHL 312
- 320. Existentialism**
Fall, 3(3-0)
P: One PHL course.
Husserl, Jaspers, Kierkegaard, Marcel, Nietzsche, Sartre, and de Beauvoir. Topics such as hope, anxiety, bad faith, subjectivity, freedom, social being, phenomenological method.
QA: PHL 323
- 330. Formal Reasoning I**
Fall, Spring, 4(4-0)
Formal methods in deductive reasoning. Logic of connectives and quantifiers, including identity, functions, and descriptions.
QA: PHL 337, PHL 338
- 331. Formal Reasoning II**
Spring, 4(4-0)
P: PHL 330.
Axiomatic method. Informal axiomatizations of set theory and probability theory. Metatheory of elementary logic.
QP: PHL 337 QA: PHL 338
- 340. Ethics**
Fall, Spring, 3(3-0)
P: One PHL course.
Inquiry through the writings of some important theorists, their critics and their contemporary followers. Aristotle, Hume, Kant, Mill, Sidgwick.
QA: PHL 330, PHL 431
- 344. Ethical Issues in Health Care**
Fall, Spring, 4(4-0)
R: Not open to freshmen and sophomores.
Termination of treatment, truth-telling, informed consent, human experimentation, reproductive issues, allocation of scarce resources, justice and the health care system.
QA: PHL 340
- 345. Business Ethics**
Fall, 4(4-0)
R: Not open to freshmen and sophomores.
Ethical dimensions of the relationships between a business and employees, consumers, other businesses, society, government, and the law.
QA: PHL 345
- 347. Aesthetics**
Fall, 3(3-0)
P: One course in art or literature or music or philosophy.
Theories of aesthetic value and the nature of art. Works of such aestheticians as Plato, Hume, Kant, Hegel, Tolstoy, Santayana, Wittgenstein, Isenberg, Langer, Murdoch.
QA: PHL 350
- 350. Moral and Political Issues**
Fall, 3(3-0)
P: One PHL course.
Justice, rights and responsibilities. Topics such as equality of opportunity, justice for the aged and future generations, and abortion.
QA: PHL 460
- 354. Philosophy of Law**
Fall, Spring, 3(3-0)
P: One PHL course or two PLS courses.
Legal concepts such as punishment, responsibility, rights and duties, and judicial decisions. Legal theories such as natural law, positivism and realism.
QA: PHL 360
- 356. Philosophical Aspects of Feminism**
Fall, Spring, 4(4-0)
Conceptual and normative issues in feminist theory. Topics such as sexism, oppression, coercion, control, power, equality, personhood, respect and self-respect, rape, separatism, community, intimacy, and autonomy.
QA: PHL 341
- 357. Philosophy of Karl Marx**
Spring, 3(3-0)
P: One PHL course.
Marx's philosophical thought and its bearing on science, religion, art and politics.
QA: PHL 366
- 360. Philosophy of Language**
Spring, 3(3-0)
P: One course in Philosophy.
Elementary topics in semantics, linguistic pragmatics, and philosophy of language. Meaning, denotation, speech acts, and linguistic relativity.
QA: PHL 370
- 380. Nature of Science**
Fall, Spring, 3(3-0)
P: One course in the biological, physical, or mathematical sciences.
Conflicting views about science and values. Such topics as scientific methodology; the objectivity and value neutrality of science; the presuppositions, goals, and limits of science; and science and decision making.
QA: PHL 380
- 410. Plato**
Fall, 4(4-0)
P: PHL 210 or two other Philosophy courses.
Development of Platonic philosophy from the early Socratic Academy. Emphasis on the middle dialogues, especially the 'Republic'.
QP: PHL 211 QA: PHL 410
- 411. Aristotle**
Spring, 4(4-0)
P: PHL 210 or PHL 410 or two other Philosophy courses. R: Not open to freshmen and sophomores.
Aristotle's major works and his major contributions to the sciences, metaphysics, ethics, and politics.
QP: PHL 211 or PHL 410 QA: PHL 411, PHL 412
- 412. Medieval Philosophy**
Fall of even-numbered years, 3(3-0)
P: PHL 210 or two other Philosophy courses. R: Not open to freshmen and sophomores.
Medieval philosophy from the fourth to the sixteenth centuries, emphasizing the contributions of Augustine and Aquinas.
QP: PHL 211 or PHL 212 or PHL 411 QA: PHL 414
- 413. Continental Rationalism**
Fall of odd-numbered years, 4(4-0)
P: PHL 211 or two other Philosophy courses.
The rationalists of the seventeenth century, with emphasis on Descartes, Spinoza and Leibniz.
QP: PHL 212 QA: PHL 413
- 414. British Empiricism**
Fall of even-numbered years, 3(3-0)
P: PHL 211 or two other Philosophy courses.
The philosophy that strives to trace all our ideas and beliefs, whether in science, morality, or religion, back to their source in experience. Emphasis on the works of Locke, Berkeley, and Hume.
QP: PHL 212 or PHL 213 QA: PHL 416
- 415. Kant**
Spring, 4(4-0)
P: PHL 211 or two other Philosophy courses.
Kant's metaphysical and epistemological system, focusing on his 'Critique of Pure Reason'.
QP: PHL 213 QA: PHL 423
- 416. Hegel**
Spring of odd-numbered years, 4(4-0)
P: PHL 211 or PHL 415 or three other Philosophy courses.
Hegel's dialectic and its bearing on both the history of philosophy and issues about science, politics, art and religion.
QP: PHL 213 or PHL 423 QA: PHL 427
- 417. 19th Century Philosophy**
Fall, 4(4-0)
P: PHL 210 or PHL 211.
Emphasis on attempts to overcome the Kantian limits on human knowledge postulated by Kant. Works by writers such as Fichte, Schopenhauer, Nietzsche, and James.
QP: PHL 213 or PHL 423 QA: PHL 419
- 418. Topics in 20th-Century Analytical Philosophy**
Fall, 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.
P: One Philosophy course at 300 level or above.
Issues in the works of such philosophers as Frege, Russell, Moore, Wittgenstein, Carnap, Quine, Austin, and Kripke.
QA: PHL 420
- 420. Topics in 20th-Century Continental Philosophy**
Fall, 4(4-0) A student may earn a maximum of 12 credits in all enrollments for this course.
P: 3 credits in Philosophy at 300 level or above.
Recent European movements such as phenomenology, poststructuralism, critical theory, hermeneutics, and philosophical anthropology.
QA: PHL 424
- 421. Topics in European Philosophy**
Spring, 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.
P: PHL 320 or PHL 420.
A particular problem, topic, or author in nineteenth- and twentieth-century European philosophy, such as Kierkegaard, Husserl, Heidegger, Lukacs, Marxism vs. existentialism, and theories of interpretation.
QP: PHL 323 QA: PHL 428
- 430. Topics in Philosophical Logic**
Spring, 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.
P: PHL 330.
Selected topics from metalogic, model theory, artificial intelligence and deviant logics.
QP: PHL 337 QA: PHL 436
- 440. Central Issues in Ethics**
Spring, 4(4-0)
P: PHL 340 or PHL 350 or PHL 450.
Twentieth-century discussions of universalization, utilitarianism, nature of a moral theory, moral language, relativism, skepticism, theory and practice, weakness of will, moral education, and justification.
QP: PHL 330 or PHL 360 or PHL 431 QA: PHL 432
- 447. Advanced Aesthetics**
Fall of even-numbered years, 3(3-0)
P: PHL 347 or graduate student.
Aesthetic theory. Philosophies of architecture, literature, and music. Nature of criticism. Classification of arts. Postmodernism. Close examination of particular authors.
QP: PHL 350
- 450. Topics in Social and Political Philosophy**
Fall, Spring, 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.
P: PHL 340 or PHL 350 or PHL 440.
Political authority, individual liberty, aspects of social justice. Authors such as Plato, Hobbes, Locke, and Rawls.
QP: PHL 330 QA: PHL 365
- 460. Epistemology**
Fall, 3(3-0)
P: One Philosophy course at the 300 level or above.
Theories and concepts of knowledge, belief, epistemic justification, certainty, and reason.
QA: PHL 440

Descriptions—Philosophy of Courses

461. **Metaphysics**

Spring, 3(3-0)

R: One Philosophy course at the 300 level or above or two other Philosophy courses.

Basic concepts employed in trying to understand the nature of things. Concepts include universals, particulars, things, kinds, properties, events, persons, change, causality, chance, existence, possibility, necessity, space, and time.

QA: PHL 445

462. **Philosophy of Mind**

Fall, 3(3-0)

R: One philosophy course at the 300 level or above or two other Philosophy courses.

Modern theories of the mind, other minds, and the mind's relation to the body. Theories include dualism, behaviorism, criteriology, reductive and eliminative materialism, and functionalism.

QA: PHL 447

463. **Introduction to Cognitive Science**

Spring, 3(3-0) Interdepartmental with

Linguistics and Psychology.

P: PHL 462 or PSY 200 or LIN 401 or CPS 440.

Cognitive processing of information by animals, humans, and computers. Relevant issues in philosophy, linguistics, psychology, neurophysiology, and artificial intelligence.

QP: PHL 447 or PSY 300 or LIN 401 or CPS 441

QA: PHL 450

474. **Aesthetic Theory and Modernism**

Fall, 4(4-0) Interdepartmental with History of Art, English, Linguistics and Languages,

Music, and Romance Language Courses.

R: Not open to freshmen and sophomores.

Problems, assumptions, and arguments of modern aesthetic theory examined in the context of debates over modernity and modernist artistic practice.

QA: PHL 434

480. **Philosophy of Science**

Fall, 4(4-0)

P: PHL 130 or PHL 330 or a 200 level mathematics or statistics course or approval of department.

Structure of scientific theories and explanation. Causation, prediction, induction, confirmation, discovery, and scientific progress.

QP: PHL 337 QA: PHL 480, PHL 481

481. **Topics in Science Studies**

Spring, 3(3-0)

P: Three science courses or two philosophy courses or approval of department.

Converging trends in philosophy, history, and sociology of science. Such topics as scientific rationality and objectivity, evolutionary epistemology, continental approaches, or feminist perspectives.

484. **Philosophy of Biological Science**

Spring, 3(3-0)

P: Three courses in biological science or two courses in PHL or approval of department.

Philosophical and methodological issues in biology. Topics such as functional explanation, classification, the structure of evolutionary theory, reductionism, observation and measurement, or value-neutrality.

QA: LBS 484

485. **Philosophy of Social Science**

Spring, 3(3-0)

P: Three courses in social science or two courses in PHL or approval of department.

Explanations, theories, and concepts in social science. Such topics as historicism; reductionism; rationality and relativism; comparison of logical empiricist, interpretive, and critical theory approaches.

QA: PHL 485

487. **Philosophy of Mathematics**

Fall of odd-numbered years, 3(3-0)

P: Three courses in mathematics or PHL 330 or approval of department.

Nature of mathematical truth and knowledge. Theses of logicism, formalism, intuitionism, and conventionalism.

QP: PHL 337

488. **Philosophy of Physical Science**

Fall of even-numbered years, 3(3-0)

P: Three courses in physical science or two courses in PHL or approval of department.

Philosophical problems of the physical sciences. Topics from such areas as quantum mechanics, space-time, classical mechanics, or relativity.

490. **Independent Study**

Fall, Spring, 1 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course.

R: Approval of department.

Supervised special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.

QA: PHL 490

491. **Special Topics in Philosophy**

Fall, Spring, 3 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course.

R: Approval of department.

Special topics supplementing regular course offerings, proposed by faculty on a group study basis.

QA: PHL 494

492. **Seminar for Majors**

Fall, 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.

P: 16 credits in Philosophy. R: Open only to majors in Philosophy or approval of department.

Advanced, variable topic seminar for undergraduate majors. Seminar presentations. Substantial paper.

499. **Senior Thesis Research**

Fall, Spring, 3 credits.

R: Approval of department.

Individual research project supervised by a faculty member that demonstrates the student's ability to do independent research and submit or present a major paper.

810. **Seminar in the History of Philosophy**

Fall, 2 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course.

R: Open only to graduate students in Philosophy or approval of department.

Major thinkers, themes, periods, or movements in the history of philosophy.

QA: PHL 825

820. **Seminar in Continental Philosophy**

Fall of even-numbered years, 2 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course.

R: Open only to graduate students in Philosophy or approval of department.

Major figures or themes in 19th and 20th century continental philosophy.

QA: PHL 825, PHL 842, PHL 860

830. **Seminar in Logic and the Philosophy of Language**

Fall of odd-numbered years, 2 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course.

R: Open only to graduate students in Philosophy or approval of department.

Selected topic in philosophy of language, philosophical logic, and metatheory.

QA: PHL 837, PHL 870

840. **Seminar in Value Theory**

Spring, 2 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course.

R: Open only to graduate students in Philosophy. Approval of department.

Major figures, themes, or periods in ethics or aesthetics. Topics vary.

QA: PHL 830

850. **Seminar in Social and Political Philosophy**

Spring of odd-numbered years, 2 to 4

credits. A student may earn a maximum of 10 credits in all enrollments for this course.

R: Open only to graduate students in Philosophy. Approval of department.

Major figures, themes, or periods in social and political philosophy. Topics vary.

QA: PHL 860

860. **Seminar in Metaphysics and Epistemology**

Fall, 2 to 4 credits. A student may earn a maximum of 15 credits in all enrollments for this course.

R: Open only to graduate students in Philosophy or approval of department.

Selected topics in metaphysics, epistemology, and philosophy of mind.

QA: PHL 841, PHL 845

870. **Seminar in Philosophy of Health Care**

Fall, 2 to 4 credits. A student may earn a maximum of 15 credits in all enrollments for this course.

R: Open only to graduate students in Philosophy or approval of department.

Ethical, political, theoretical, and methodological issues in medicine and health care.

880. **Seminar in Philosophy of Science**

Spring, 2 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course.

R: Open only to graduate students in Philosophy. Approval of department.

Selected topics in the philosophy of the special sciences, in the metatheory of science, and in the social studies of science.

QA: PHL 880

890. **Independent Study**

Fall, Spring, Summer, 1 to 10 credits. A student may earn a maximum of 20 credits in all enrollments for this course.

R: Approval of department.

Special projects, directed reading, and research arranged by an individual graduate student and a faculty member in areas supplementing regular course offerings.

QA: PHL 890

894. **Practicum in Philosophy of Health Care**

Spring, 4 to 6 credits. A student may earn a maximum of 12 credits in all enrollments for this course.

P: PHL 344. R: Open only to doctoral students in Philosophy or approval of department.

Study of ethical and policy issues in hospital and governmental agency settings.

899. **Master's Thesis Research**

Fall, Spring, Summer, 1 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.

R: Approval of department.

Directed research leading to a master's thesis in partial fulfillment of Plan A master's degree requirements.

QA: PHL 899

999. **Doctoral Dissertation Research**

Fall, Spring, Summer, 1 to 12 credits. A student may earn a maximum of 50 credits in all enrollments for this course.

R: Approval of department.

QA: PHL 999

PHYSICAL EDUCATION AND EXERCISE SCIENCE PES

Department of Physical Education and Exercise Science College of Education

Instructional Courses

Physical education instructional courses (PES 101-108) are offered every semester to give students an opportunity to become involved in physical activities that will benefit them, not only in attaining physical well-being, but in acquiring a measure of carry-over skill which will promote a healthful way of life through continued participation. The areas of selection are: PES 101 Aquatics, PES 102 Combative Sports, PES 103 Conditioning, PES 104 Dance, PES 105 Gymnastics, PES 106 Individual Sports, PES 107 Racquet Sports, and PES 108 Team Sports.