

**2410 (MUSI 2116 or 2216). Aural Skills III.** 1 hour. (2;0) Reinforcement of theoretical concepts presented in MUTH 2400 via singing, ear training, keyboard and conducting experiences. Prerequisite(s): MUTH 1500 and 1510, both with a grade of C or better. Corequisite(s): MUTH 2400.

**2500 (MUSI 2212 or 2312). Theory IV.** 2 hours. (2;1) Analysis, part writing and harmonization covering musical practice of the period from 1880 to 1950. Prerequisite(s): MUTH 2400 and 2410, both with a grade of C or better. Corequisite(s): MUTH 2510.

**2510 (MUSI 2117 or 2217). Aural Skills IV.** 1 hour. (2;0) Reinforcement of theoretical concepts presented in MUTH 2500 via singing, ear training, keyboard and conducting experiences. Prerequisite(s): MUTH 2400 and 2410, both with a grade of C or better. Corequisite(s): MUTH 2500.

**2900. Special Problems.** 1–3 hours. Prerequisite(s): consent of college.

**3410. Sixteenth-Century Counterpoint.** 3 hours. (3;0) Contrapuntal procedures of 16th-century composers. Writing motets and madrigals in two to four voices. Prerequisite(s): MUTH 2400 and 2410, both with a grade of C or better.

**3420. Eighteenth-Century Counterpoint.** 3 hours. Contrapuntal procedures of 18th-century composers. Writing inventions, chorale preludes and other 18th-century forms. Prerequisite(s): MUTH 2400 and 2410, both with a grade of C or better.

**3510. Form Analysis.** 3 hours. Structural principles of 18th- and 19th-century music determined by analysis of major composers' works, larger instrumental and vocal forms. Prerequisite(s): MUTH 2400 and 2410, both with a grade of C or better.

**3520. Harmonic Analysis.** 3 hours. Harmonic structure of compositions representative of different schools and composers. Prerequisite(s): MUTH 2400 and 2410, both with a grade of C or better.

**3550. Advanced Sight Singing.** 1 hour. (0;3) Instruction and practice in sight-singing materials more difficult than those taught in freshman- and sophomore-level theory classes. Development of speed reading; use of all C clefs; techniques in reading contemporary scores. Prerequisite(s): MUTH 2510 with a grade of C or better, and Theory Proficiency Exam.

**4370. Schenkerian Analysis.** 3 hours. (3;0) Analysis of tonal music according to the theory of structural levels and methods of graphic analysis developed by Heinrich Schenker. Prerequisite(s): MUTH 2400 and 2410, both with a grade of C or better.

**4520. Twentieth-Century Techniques.** 3 hours. Dodecaphonic and atonal set theory techniques as applied to representative works of the 20th century. Prerequisite(s): MUTH 2500 and 2510, both with a grade of C or better.

**4900–4910. Special Problems.** 1–3 hours each. Prerequisite(s): consent of college.

**4920. Senior Colloquium in Music Theory.** 3 hours. In consultation with the instructor, each student is to develop a major paper on a specialized topic in music theory, as appropriate to advanced undergraduate standing. Prerequisite: MUTH 3410, 3420, 3510, 3520 and 3550.

**4951. Honors College Capstone Thesis.** 3 hours. Major research project prepared by the student under the supervision of a faculty member and presented in standard thesis format. An oral defense is required of each student for successful completion of the thesis. Prerequisite(s): completion of at least 6 hours in honors courses; completion of at least 12 hours in the major department in which the thesis is prepared; approval of the department chair and the dean of the school or college in which the thesis is prepared; approval of the dean of the Honors College. May be substituted for HNRS 4000.

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## Music Education

see Music

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## Music History and Literature, Musicology

see Music

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## Music Laboratories

see Music

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## Nuclear Engineering Technology

see Engineering Technology

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## Philosophy and Religion Studies

### *Philosophy, PHIL*

**1050 (PHIL 1301). Introduction to Philosophy.** 3 hours. Selected problems, issues and major philosophers. Critical study of philosophical arguments and schools. *Satisfies the Humanities requirement of the University Core Curriculum.*

**1400 (PHIL 2306). Introduction to Contemporary Moral Issues.** 3 hours. Explores philosophical dimensions of such moral issues as abortion, artificial insemination, care of the aged, care of the dying, chemical and drug therapy, meaning of personhood, marriage and divorce, mercy killing, the mental health ethic, new styles of intimacy, organ transplanting, premarital and extramarital sexual behavior, persuasion techniques, pollution and conservation, violence and oppression, pornography and world hunger. *Satisfies the Humanities requirement of the University Core Curriculum.*

**2050 (PHIL 2303). Introduction to Logic.** 3 hours. Correct types of arguments; language analysis. *Satisfies the Humanities requirement of the University Core Curriculum.*

**2070 (PHIL 1304). Introduction to Great Religions.** 3 hours. Philosophical and social dimensions of Hinduism, Buddhism, Taoism, Judaism, Christianity, Humanism and Islam. Emphasizes the diversity of religious experience and traditions. *Satisfies a portion of the Understanding the Human Community requirement of the University Core Curriculum.*

**2310 (PHIL 2316). Introduction to Ancient Philosophy.** 3 hours. An examination of metaphysical, epistemological and ethical views in the Ancient Period, focusing on the writings of Plato and Aristotle. *Satisfies the Humanities requirement of the University Core Curriculum.*

**2330 (PHIL 2317). Introduction to Modern Philosophy.** 3 hours. (2;0;1) An examination of metaphysical, epistemological and ethical views in the Modern Period, focusing on the writings of the Rationalists and the Empiricists. *Satisfies the Humanities requirement of the University Core Curriculum.*

**2400. Religion and American Society.** 3 hours. Selected topics in the relationship of religion to society in the United States. Subjects covered include the development of religious pluralism in the United States, the role and contributions of religious minorities, religion and civil rights, religion and gender issues and religious response to cultural change. *Satisfies a portion of the Understanding the Human Community requirement of the University Core Curriculum.*

**2500. Introduction to Contemporary Environmental Issues.** 3 hours. Explores ethical, ecological and policy dimensions of such international environmental issues as atmospheric and water pollution, global climate change, care of agricultural lands, water scarcity, overharvest of renewable resources, loss of biodiversity and world population growth. Environmental problems are related to other social and ethical concerns. *Satisfies the Humanities requirement of the University Core Curriculum.*

**2600. Ethics in Science.** 3 hours. Explores the ethical and policy dimensions of scientific research, addressing issues such as research integrity, peer review, authorship status, issues of trustworthiness, human subjects and animals, as well as the policy context of science, including science for policy, societal impact criteria and policy for science. *Satisfies the Social and Behavioral Sciences requirement of the University Core Curriculum.*

**2900. Special Problems.** 1–3 hours.

**3100. Aesthetics.** 3 hours. Principles of value and aesthetics proposed by representative artists and philosophers. Prerequisite(s): upper-division standing or consent of department. Recommended for art majors.

**3110. Epistemology.** 3 hours. Fundamental problems and issues of the knowing situation; realistic, dualistic and idealistic epistemic positions; critique of traditional contemporary theories of knowing in ancient medieval and modern thought. Prerequisite(s): upper-division standing or consent of department.

**3120. Introduction to Social and Political Philosophy.** 3 hours. Relation between philosophical ideas and community; natural right, justice, freedom and authority.

**3200. Philosophy in Literature.** 3 hours. Major philosophical themes such as Platonism, stoicism, skepticism and mysticism that appear in poetry, fiction and drama. Prerequisite(s): upper-division standing or consent of department.

**3250. Philosophy of Natural Science.** 3 hours. Development of theories and methods in sciences; organization of sciences and their cultural implications. Prerequisite(s): upper-division standing or consent of department. Recommended for science majors.

**3260. Philosophy of Social and Behavioral Science.** 3 hours. Methodologies and criteria of verification appropriate to fields of inquiry; philosophical

presuppositions of various schools of behavioral science; science versus ideology. Prerequisite(s): upper-division standing or consent of department.

**3300. Symbolic Logic.** 3 hours. Symbolic analysis applied to logical problems; consistency and completeness; postulational method used in mathematics and logic. Prerequisite(s): upper-division standing or consent of department.

**3310-3360. The History of Philosophy.** 3 hours each.

**3310. Ancient Philosophy.** Philosophical thought from the pre-Socratics through Plotinus including Plato and Aristotle.

**3320. Medieval Philosophy.** Philosophical thought from Saint Augustine to the Renaissance including Saint Thomas Aquinas. Prerequisite(s): upper-division standing or consent of department.

**3330. Modern Philosophy.** Philosophical thought from the Renaissance to the 19th century including Descartes, Spinoza, Locke, Berkeley, Hume and Kant.

**3340. Nineteenth-Century Philosophy.** Chief philosophies including Schopenhauer, Nietzsche and Kierkegaard; implications for problems of science, religion and politics. Prerequisite(s): upper-division standing or consent of department.

**3350. Early 20th-Century Philosophy.** Important systems of thought in the early 20th century; basic concepts of representative thinkers such as Moore, Russell, Whitehead, Wittgenstein and Sartre. Prerequisite(s): upper-division standing or consent of department.

**3360. American Philosophy.** Writings of C.S. Pierce, William James, John Dewey and George Herbert Mead. Prerequisite(s): upper-division standing or consent of department.

**3400. Ethical Theory.** 3 hours. Analysis of major historical and contemporary ethical theories.

**3401. Ethics.** 3 hours. Analysis of the most influential theories of ethics developed in the Western tradition on the basis of the reading of original works by such authors as Aristotle, Aquinas, Kant, Bentham and Mill. Examination of the ethical dimension of a number of contemporary moral problems in the light of these works. Prerequisite(s): acceptance into Honors College.

**3570. Hebrew Bible.** 3 hours. Philosophical and ethical concepts of the Hebrew Bible compared with ancient pagan thought and subsequent Western culture. Concepts discussed include creation, revelation, holiness, faith, covenant, prophecy, idolatry, chosen people, justice, mercy, truth and peace. Prerequisite(s): upper-division standing or consent of department.

**3573. Introduction to Judaism.** 3 hours. Examines the practices, themes and movements of Judaism, emphasizing the impact of modernity on these rubrics.

**3575. Judaic Religion and Philosophy.** 3 hours. Introduction to a wide range of Judaic texts – biblical, medieval and modern – which address Jewish law, history and thought from diverse points of view.

**3580. Early Christian Thought.** 3 hours. Selected first-century Christian documents in light of Dead Sea Scrolls, Roman mystery religions, and biblical and extrabiblical Hebrew writings. Prerequisite(s): upper-division standing or consent of department.

**3585. South Asian Philosophy and Religion.** 3 hours. Study of South Asian philosophical and religious thought from earliest times to the present: the Indus Valley civilization, Vedic religion, the development of Jainism, Buddhism and devotional Hinduism, the philosophical schools, medieval Indian thought, Sikhism, and modern Indian philosophy. Prerequisite(s): upper-division standing or consent of department.

**3595. East Asian Philosophy and Religion.** 3 hours. Philosophical study of East Asia from earliest times to the present, including ancient Chinese religion; Taoist, Confucian, Mohist and Legalist philosophies; Chinese Buddhism and Neo-Confucianism; the influence of Shinto, Buddhism and Neo-Confucianism upon medieval Japan; and Japanese philosophy since the Meiji Restoration. Prerequisite(s): upper-division standing or consent of department.

**3600. Philosophy of Religion.** 3 hours. Arguments for and against existence of a deity; meanings of concepts of religion, evil, good and worship; impact of religious beliefs and commitments on social and moral life.

**3800. Philosophy of Psychology and Mind.** 3 hours. The brain/mind relationship; free will versus determinism; positivism versus critical realism. Consciousness and the unconscious; rationality; the naturalistic fallacy; verbal behavior; humanism; mental health. Prerequisite(s): upper-division standing or consent of department. Recommended for psychology majors.

**4400. Metaphysics.** 3 hours. Problems and structures in idealism, realism, naturalism and process metaphysics. Prerequisite(s): upper-division standing or consent of department.

**4450. Philosophy of Ecology.** 3 hours. Traces the development of ecology from its roots in 19th-century natural history through general ecology, restoration ecology, deep ecology and social ecology. Examines the central philosophical concepts of biological and cultural diversity; the relations between societies and their environments; environmental and social problems determined by losses in biocultural diversity; agriculture, land ethics and conservation; non-Western conceptions of nature and society.

**4500. Existentialism.** 3 hours. The place of man in the world, and his relation to problems of authenticity, anxiety and forlornness; Kierkegaard, Nietzsche, Heidegger and Sartre. Prerequisite(s): upper-division standing or consent of department.

**4550. Philosophy of Science and Technology.** 3 hours. Examines the relationship between science and technology; the role of experiment and instrumentation in scientific practice; the social construction of scientific knowledge and technical artifacts; the nature of technology in human perception and experience; the role of technology in the broader social impacts of science and technology; the relationship of biotechnology, information technology, imaging technology and nanotechnology to society.

**4600. Phenomenology.** 3 hours. Techniques and principles of phenomenological investigation; Husserl, Scheler and Merleau-Ponty. Prerequisite(s): upper-division standing or consent of department.

**4700. Environmental Ethics.** 3 hours. An examination of basic positions in the field of environmental ethics with emphasis on legal and moral rights for nature, animal

liberations and Western philosophical and religious traditions. Prerequisite(s): one previous course in philosophy or consent of department.

**4750. Philosophy and Public Policy.** 3 hours. Explores how recent developments in moral theory, political philosophy, and philosophy of science and technology can clarify issues in public policy. Topics include the nature of government, the justification and limitations of collective action, the instruments of public policy, democracy and the economy, social costs and benefits, science and technology policy, computers and information policy, food and water policy, and environmental and development policy.

**4900-4910. Special Problems.** 1–3 hours each.

**4951. Honors College Capstone Thesis.** 3 hours. Major research project prepared by the student under the supervision of a faculty member and presented in standard thesis format. An oral defense is required of each student for successful completion of the thesis. Prerequisite(s): completion of at least 6 hours in honors courses; completion of at least 12 hours in the major department in which the thesis is prepared; approval of the department chair and the dean of the school or college in which the thesis is prepared; approval of the dean of the Honors College. May be substituted for HNRS 4000.

**4960. Proseminar in Philosophy.** 3 hours. Seminar approach to philosophical method; dialectical, phenomenological and/or analytic techniques. Prerequisite(s): senior standing or consent of department. May be repeated for credit as topics vary.

**4970. Capstone Seminar.** 3 hours. Seminar on philosophical writing and argument focusing on the comparative study of important figures in the history of philosophy. Prerequisite(s): senior standing and consent of department. Required course for philosophy majors only.

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## Physical Education

see Kinesiology, Health Promotion and Recreation

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## Physics

### Astronomy, PHYS

**1052 (PHYS 1404). The Solar System.** 3 hours. (3;2) History of astronomy and the physical properties of the earth, moon, planets and minor bodies. Includes weekly outdoor and indoor laboratory exercises. Prerequisite(s): proficiency in algebra (MATH 1100 or above). *May be used to satisfy a portion of the Natural Sciences requirement of the University Core Curriculum.*

**1062 (PHYS 1403). Stars and the Universe.** 3 hours. (3;2) Properties of stars and stellar systems and a study of the origin, evolution and future of the universe. Includes weekly outdoor and indoor laboratory exercises. Prerequisite(s): proficiency in algebra (MATH 1100 or above). *May be used to satisfy a portion of the Natural Sciences requirement of the University Core Curriculum.*