

Music 397 (3)—Seminar: Topics in Composition-Related Techniques

Prerequisite: Permission of the instructor. Topics change from year to year and include such items as analysis, orchestration, and electronic music. May be repeated for degree credit with permission and if the topics are different. (HA, GE4a) *Vosbein*.

Spring

Music 423 (3)—Directed Individual Project

Prerequisites: Music major and permission of the instructor. May be repeated for degree credit with permission. *Staff*.

Fall, Winter

Music 441 (1-2), 442 (1-2), 443 (1)—Applied Music: Fourth Year

Prerequisites: Permission of the instructor; seniors must have permission of the department head. One credit is earned for a 45-minute private lesson and a minimum of five hours practice a week during fall and winter terms; a one-hour private lesson and a minimum of seven hours of practice a week are required during the spring term. *Staff*.

Fall, Winter, Spring

Music 451 (1), 452 (2), 453 (3)—Internship

Prerequisite: At least 12 credits in music appropriate to the internship. After consultation with the head of the Department of Music and a representative of the sponsoring organization, students may submit a written description of a proposed summer internship with an organization such as an arts presenter, a performance group, a record company, or an opera company. Specific conditions of the internship and of required on-campus follow-up projects must be approved by the department in advance. Students register for the internship credit(s) during fall registration, and the credit is awarded at the end of the fall term upon acceptable completion of the required, on-campus follow-up project, reviewed by a faculty adviser and the department head. *Staff*.

Fall

Music 473 (3)—Senior Thesis

Prerequisites: Music major and permission of the instructor. For theory composition students, this culminates with a half-recital of original compositions or an analytical thesis. For history students, this culminates with the writing of a thesis. For performance students, this culminates with a formal half-recital. *Staff*.

Fall, Winter

Music 493 (3-3)—Honors Thesis

Prerequisites: Honors candidacy and senior standing. A summary of prerequisites and requirements may be obtained from the department head. *Staff*.

Fall-Winter

NEUROSCIENCE (NEUR)

PROFESSOR LORIG*

MAJOR

A major in **neuroscience** leading to a Bachelor of Science degree requires the completion of at least 50 credits, including the following:

1. *Core:* Biology 111, 113, 220; Chemistry 111, 112; Neuroscience 120, 395
2. *Quantitative Methods:* Computer Science 121; Psychology 120; and either Biology 301 or Psychology 250
3. *Specialization:* Completion of at least four of the following courses chosen from at least two disciplines
 - a. Biology 215 (or 215S), 243, 250, 255, 301, 397
 - b. Physics 251 (Engineering 251), 315
 - c. Psychology 252, 253, 254, 255, 257, 258
4. *Capstone:* At least three credits chosen from Neuroscience 422, 423, 424, 442 and 493 and three additional credits chosen from 400-level neuroscience courses.

Students contemplating application to graduate programs or medical school should note that Chemistry 241 (or 241S) (Organic Chemistry I), 242 (Organic Chemistry II), 341 (Biochemistry I), Mathematics 102 (Calculus II), and Physics 112 and 114 (General Physics II) are either required or highly recommended by most admissions committees.

HONORS: An Honors Program in neuroscience is offered for qualified students; see program head for details.

Neuroscience courses are as follows; for course descriptions, see the appropriate departmental listings:

Biology 111, 113—Fundamentals of Biology and Laboratory
 Biology 215—Biochemistry of the Cell
 Biology 215S—Biochemistry at St. Andrews
 Biology 220—Genetics
 Biology 243—Animal Behavior
 Biology 250—Vertebrate Endocrinology
 Biology 255—Reproductive Physiology
 Biology 301—Statistics for Biology and Medicine
 Biology 397—Neuroendocrinology
 Computer Science 121
 Computer Science 315—Artificial Intelligence
 Math 102
 Neuroscience 120—Introduction to Neuroscience
 Neuroscience 395—Special Topics in Neuroscience
 Neuroscience 401-403—Directed Individual Study
 Neuroscience 422-424—Directed Individual Research
 Neuroscience 442—Honors Thesis Proposal
 Neuroscience 493—Honors Thesis
 Physics 251 (Engineering 251)—Experimental Methods in Physics and Engineering
 Physics 315
 Psychology 120—Quantitative Literacy in the Behavioral Sciences

*Head of the Neuroscience major.

Psychology 250—Research Design and Analysis
 Psychology 252—Sensation Measurement and Perception
 Psychology 253—Neural Mechanisms of Motivated Behaviors
 Psychology 254—Attention and Memory
 Psychology 255—Cognitive Neuroscience
 Psychology 257—Psychobiology of Development
 Psychology 258—Neural Mechanisms of Sensory and Motor Function

Neuroscience 120 (3)—Introduction to Neuroscience

An introduction to neuroscience emphasizing the molecular organization, chemistry, and physiology of the neuron; how neurons are organized into functional circuits; and how these functional circuits process information and control both normal and abnormal behavior. (SC) *R. Stewart.*

Winter

Neuroscience 395 (1, 2, or 3)—Special Topics in Neuroscience

Prerequisites: Neuroscience 120 and junior standing.

A seminar designed to provide the advanced student with a broader knowledge of the field of neuroscience. Specific topics will vary and will be determined, in part, by student interest. May be repeated for credit with permission and if the topics are different. *Staff.*

Fall, Winter

Neuroscience 401 (1), 402 (2), 403 (3)—Directed Individual Study

Prerequisite: Permission of the neuroscience faculty. This seminar involves independent reading and/or research. Students are expected to prepare a detailed research proposal based on their independent work. May be repeated for degree credit with permission and if the topics are different. *Staff.*

Fall, Winter, Spring

Neuroscience 422 (2), 423 (3), 424 (4)—Directed Individual Research

Prerequisites: Permission of the neuroscience faculty. Each student conducts primary research in partnership with a neuroscience faculty member by prior mutual agreement. Consult with individual faculty for a description of current research areas. May be repeated for degree credit with permission and if the topics are different. No more than six credits may apply towards the major. *Staff.*

Fall, Winter, Spring

Neuroscience 442 (2)—Honors Thesis Proposal

Prerequisite: Honors candidacy. Writing a proposal for honors thesis research, including a clear statement of the problem being studied, a literature review, and a feasible, detailed plan for the research. Taken no later than the Winter Term of the junior year. *Staff.*

Offered in fall or winter when interest is expressed and departmental resources permit.

Neuroscience 493 (3-3)—Honors Thesis

Prerequisites: Senior standing and honors candidacy. Individual conference. *Staff.*

Fall-Winter

PHILOSOPHY (PHIL)

Pierre S. duPont Foundation

PROFESSOR SESSIONS

ASSOCIATE PROFESSOR MAHON

ASSISTANT PROFESSORS BELL, GREGORY

MAJOR

A major in **philosophy** leading to a Bachelor of Arts degree requires completion of 42 credits including the following:

- At least 30 credits in philosophy, exclusive of Philosophy 473 and 493, and including:
 - Philosophy 106
 - at least 21 credits chosen from philosophy courses numbered 200 and above
 - four courses in the history of philosophy or major figures chosen from among the following: Philosophy 141, 142, 144, 221 (Classics 221), 222, 263, 265, 270, 311, 314, 316, and 195, 395, and 403 when the topics are appropriate
- At least nine credits chosen from offerings in philosophy or related disciplines, with the approval of the department head
- Philosophy 473 (3) or 493 (3-3). The thesis is prepared under the supervision of an adviser and is presented for evaluation in the student's final term, normally the Spring Term of the senior year.

HONORS: An Honors Program in philosophy is offered for qualified students; see department head for details.

Philosophy 101 (3)—Problems of Philosophy

Open to freshmen and sophomores only. An introduction to some of the major ethical, political, and social problems we persistently confront. Selected readings from major philosophers. (HU, GE4c) *Staff.*

Fall, Winter

Philosophy 102 (3)—Problems of Philosophy

Open to freshmen and sophomores only. Philosophy 101 is not a prerequisite for this course. An introduction to some of the major problems that arise in inquiry into the nature of knowledge and reality. Selected readings from major philosophers. (HU, GE4c) *Staff.*

Fall

Philosophy 106 (3)—Introduction to Logic

The study of argumentation and modern formal logic. This course explores the basic principles of deductive and inductive reasoning. Students learn to symbolize and evaluate natural language arguments. Topics covered include the study of formal and informal fallacies, propositional and predicate logic, scientific induction, and probabilities. (HU, GE4c) *Gregory.*

Fall, Winter