Department of Philosophy

Davidanks, Department Head
Office: Baker Hall 161
http://www.cmu.edu/dietrich/philosophy/index.html

The Department of Philosophy was founded in 1985 and reflects the tradition of philosophy as a central discipline in the humanities. The department has achieved an international reputation through the acclaimed research of its members and its innovative educational programs, not only in traditional topics such as ethics, philosophy of mind, logic, and theories of knowledge, but in such contemporary and applied areas as automated theorem proving, machine learning, the foundations of statistics, causal discovery, forward learning theory, game and decision theory, conflict resolution, and business ethics.

Philosophy thrives through contact with other disciplines. Interdisciplinary work, a traditional strength of the Carnegie Mellon community, is vital to the department and is reflected in the courses we offer, many of which incorporate substantive material from a range of other disciplines. Some courses are actually taught with professors from other departments and schools around the university.

Our programs are designed to develop our students' analytical sophistication and their practical and theoretical skills in specializations outside the department (see the sample curricula below). The department welcomes and, indeed, encourages minors and additional majors from other disciplines who are interested in reflecting on the foundation of their own subjects. The department offers two different undergraduate major programs, and jointly sponsors two interdepartmental majors: Ethics, History, and Public Policy (with the Department of History), and Linguistics (with English, Modern Languages, and Psychology):

- the B.A. or B.S. in Ethics, History, and Public Policy (interdisciplinary major with Department of History)
- the B.S. in Logic and Computation
- the B.A. in Philosophy
- the B.A. in Linguistics (interdisciplinary major with Departments of English, Modern Languages, and Psychology)

The major in Logic and Computation is perhaps the most non-traditional of the department's majors. It offers students a firm background in computer science, together with a solid grounding in logic, philosophy, and mathematics. This reflects the department's commitment to the use of formal, analytic methods in addressing philosophical issues. A flexible system of electives allows students to focus their efforts in any of a wide range of disciplines, from engineering to the fine arts. As a capstone to the program, students engage in original research in their senior year, and write a thesis under the direction of an advisor.

The department also sponsors four minor programs:

- the minor in Ethics
- the minor in Linguistics
- the minor in Logic and Computation
- the minor in Philosophy

Finally, the department offers two master's programs directly extending the departmental majors. Both programs are coordinated with and build on the undergraduate programs, so that majors can complete the requirements for the master's degree in one additional year:

- the M.S. in Logic and Computation
- the M.A. in Philosophy

Students who choose the appropriate specialized track in the Logic and Computation major (namely, sample 2 of the Curricula listed below) can be admitted to the M.S. program in Language and Information Technology offered by the School of Computer Science. To complete the discussion of departmental programs, it should be mentioned that the department sponsors as part of the Program in Pure and Applied Logic (offered jointly with the Departments of Computer Science and Mathematics) a Ph.D. in Logic, Computation, and Methodology.

The Major in Ethics, History, and Public Policy

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The B.A./B.S. in Ethics, History, and Public Policy is an interdepartmental major offered jointly by the Departments of History and Philosophy. It prepares students for leadership positions by providing them with a rigorous, interdisciplinary humanistic and social-scientific education. It also serves as an excellent springboard for graduate study in a wide variety of disciplines such as law, public policy, ethics, and advocacy. The program focuses equally on the historical understanding of how modern-day problems have evolved, and the importance of developing clear criteria for ethical decision-making. The capstone project course provides students with the opportunity to engage with real-world public policy challenges using the methods, theories, and knowledge that they have gained through the major. Offered jointly by the departments of History and Philosophy, the B.A./B.S. in EHPP encourages specialization, internship experiences, and research in a wide range of policy areas.

Curriculum

Students graduating with a primary major in Ethics, History, and Public Policy may elect to receive either a Bachelor of Arts or a Bachelor of Science Degree (additional requirements apply; see below). Basic requirements include 120 units encompassing 9 units in Economics, 36 units in History, 36 units in Philosophy, 27 units of elective courses, and a 12-unit senior capstone course. This program may also be taken as an additional (e.g., second) major. All courses toward the major must be taken for a letter grade, and 79-200 and 79-300 must be passed with a grade of "C" or better. Students can double count any course for the major with another major or minor, with the exception of Social and Political History, for which a student can double count a maximum of two courses.

I. Economics Requirement 9 units
73-102 Principles of Microeconomics 9

II. History Core 36 units
Choose one 9-unit course from each category below:

Policy History (9 units)
79-300 History of American Public Policy 9

U.S. History (9 units)
79-240 Development of American Culture 9
79-249 20th/21st Century U.S. History 9

Non-U.S. History (9 units)
79-202 Flesh and Spirit: Early Modern Europe, 1400-1750 9
79-203 Social and Political Change in 20th Century Central and Eastern Europe 9
79-205 20th/21st Century Europe 9
79-207 Development of European Culture 9
79-222 Between Revolutions: The Development of Modern Latin America 9
79-223 Mexico: From the Aztec Empire to the Drug War 9
79-226 African History: Earliest Times to 1780 9
79-227 African History: Height of Trans-Atlantic Slave Trade to the End of Apartheid 9
79-229 Origins of the Arab-Israeli Conflict, 1880-1948 9
79-230 Arab-Israeli Conflict and Peace Process since 1948 9
79-237 Comparative Slavery 9
79-251 India/America: Democracy, Diversity, Development 9
79-261 The Last Emperors: Chinese History and Society, 1600-1900 9
79-262 Modern China: From the Birth of Mao ... to Now 9
Tibet and China: History and Propaganda
Russian History: From the First to the Last Tsar
Russian History: From Communism to Capitalism
Religion and Politics in the Middle East

**Historical Methods and Approaches (9 units)**
- Introduction to Historical Research & Writing

**III. Philosophy Core 36 units**
Choose one 9-unit course from each category below. No more than 9 units at the 100 level may be counted toward this requirement.

**Ethics (9 units)**
- Introduction to Ethics
- Ethical Theory

**Political Philosophy (9 units)**
- Introduction to Political Philosophy
- Social and Political Philosophy

**Foundations of Social Science (9 units)**
- Philosophy of Social Science
- Causation, Law, and Social Policy
- Philosophy of Economics
- Philosophy, Politics & Economics

**Applied Philosophy (9 units)**
- Social Structure, Public Policy & Ethics
- Environmental Ethics
- Medical Ethics
- Ethics and Global Economics
- Deliberative Democracy: Theory and Practice
- Health Development and Human Rights
- Global Justice

**IV. Senior Capstone Project Course (12 units)**
- EHPP Project Course

**V. Elective Courses (27 units)**
Choose any three courses from any category or categories shown below. Substitution of elective courses that cohere with a student's interest or concentration may be allowed after consultation with and approval from the Director.

**Business**
- Organizational Behavior
- Negotiation and Conflict Resolution
- Business, Society and Ethics
- Business Law
- International Trade and International Law
- International Management

**Economics**
- Environmental Economics
- Public Economics
- Economics of the Environment and Natural Resources
- Benefit-Cost Analysis

**Historical**
- The War in Vietnam
- Development and Democracy in Latin America
- American Foreign Policy: 1945-Present
- The United States and the Middle East since 1945
- African American History: Reconstruction to the Present
- Running for President: Campaigns & Elections in History of American Presidency
- American Massacres in History and Memory
- The Soviet Union in World War II: Military, Political, and Social History
- Bananas, Baseball, and Borders: Latin America and the United States
- Mobile Phones & Social Media in Development & Human Rights: A Critical Appraisal
- From Newton to the Nuclear Bomb: History of Science, 1750-1950
- History of Surveillance: From the Plantation to Edward Snowden
- Drone Warfare and Killer Robots: Ethics, Law, Politics, and Strategy
- Pittsburgh and the Transformation of Modern Urban America
- Moneyball Nation: Data in American Life
- Modern U. S. Business History: 1870 to the Present
- The Politics of Water: Global Controversies, Past and Present
- Women, Politics, and Protest
- U.S. Gay and Lesbian History
- Body Politics: Women and Health in America
- Oil & Water: Middle East Perspectives
- History of Education in America
- Juvenile Delinquency and Film (1920 to “The Wire”)
- Juvenile Delinquency and Juvenile Justice
- Introduction to Science and Technology Studies
- The Holocaust in Historical Perspective
- Disasters in American History (2): Epidemics & Fires
- African American Urban History
- American Environmental History: Critical Issues
- Energy and Empire: How Fossil Fuels Changed the World
- Stalin and Stalinism

**Philosophy**
Courses from the EHPP Philosophy Core (above) may be taken as electives only if they are not being used to fulfill the core requirement. Double counting is not permitted.

**Institute for Politics and Strategy**
- International Political Economy and Organizations
- Grand Strategy in the United States
- Legislative Decision Making: US Congress
- Judicial Politics and Behavior
Social and Decision Sciences
88-223 Decision Analysis 9
88-281 Topics in Law: 1st Amendment 9
88-345 Perspectives on Industrial Research and Development 9
88-371 Entrepreneurship, Regulation and Technological Change 9
88-387 Social Norms and Economics 9
88-444 Public Policy and Regulation 9

VI. Bachelor of Science Option

Students may elect to earn a Bachelor of Science rather than a Bachelor of Arts degree by completing two courses from the list below, or by petitioning the Director of EHPP to accept equivalent courses as substitutions.

21-257 Models and Methods for Optimization 9
36-202 Methods for Statistics and Data Science 9
or 36-208 Regression Analysis 9
or 70-208 Regression Analysis 9
36-207 Probability and Statistics for Business Applications 9
36-303 Sampling, Survey and Society 9
36-309 Experimental Design for Behavioral and Social Sciences 9
80-305 Choices, Decisions, and Games 9
84-265 Political Science Research Methods 9
88-251 Empirical Research Methods 9

Additional Major

The B.A./B.S. in Ethics, History, and Public Policy may be scheduled as an additional major in consultation with the Director of Ethics, History, and Public Policy, Professor Alex John London, ajlondon@andrew.cmu.edu.

Ethics, History, and Public Policy Sample Curriculum

<table>
<thead>
<tr>
<th>Junior Year</th>
<th>Senior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Spring</td>
</tr>
<tr>
<td>Core requirement in Economics</td>
<td>Core requirement in History or Philosophy</td>
</tr>
<tr>
<td>Core requirement in History or Philosophy</td>
<td>Core requirement in History or Philosophy</td>
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<td>Core requirement in History or Philosophy</td>
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<tr>
<td>Core requirement in History or Philosophy</td>
<td>Core requirement in History or Philosophy</td>
</tr>
<tr>
<td>Core requirement in History or Philosophy</td>
<td>Fifth Course (open)</td>
</tr>
</tbody>
</table>

The above sample program is presented as a two-year (junior-senior year) plan for completing EHPP major requirements. Its purpose is to show that this program can be completed in as few as two years; not that it must be. Students may enter the EHPP major, and begin major course requirements, as early as the start of the sophomore year, or even in the first year. Students should consult their advisor when planning their program.

The Major in Linguistics

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Linguistics is the study of human language, and it encompasses a broad spectrum of research questions, approaches and methodologies. Some linguists are concerned with the cognitive aspects of language learning, production and comprehension; some are concerned with language as a social and cultural phenomenon; others engage in the analysis of linguistic form and meaning, some from a functional and others from a formal perspective. There are also computational approaches to linguistics with both applied and theoretical goals.

The major in Linguistics reflects the multidisciplinary character of the field and of the Linguistics faculty here at Carnegie Mellon, offering a program which provides students with the fundamental tools of linguistic analysis while maintaining a focus on the human context in which language is learned and used. The major is available as either a primary major or an additional major. It is an ideal choice for students with a general interest in their own or other languages, and combines well thematically with studies in any of the departments represented in the major.

Curriculum

The Linguistics major requires a total of 12 courses, which includes 2 semesters of language study. In addition, primary majors in Linguistics are required to write a Senior Thesis in their final year. At least three courses (not including specific language courses) must be at the 300-level or higher. All courses counted towards the major must be taken for a letter grade and passed with a grade of “C” or above. Students may double count any course for the major simultaneously with another major or minor.

Introductory course
80-180 Nature of Language 9

Fundamental Skills

Take one course from each of the following core subject areas:

- Sounds
  80-282 Phonetics and Phonology I 9

- Structure
  80-280 Linguistic Analysis 9
  80-285 Natural Language Syntax 9

- Meaning
  80-381 Meaning in Language 9
  80-383 Language in Use 9
  76-385 Introduction to Discourse Analysis 9
  or 76-484 Discourse Analysis 9

Breadth

Take one course from each of the following breadth subject areas:

Area 1: Language Learning and Language Cognition
76-420 The Cognition of Reading and Writing: Introduction to a Social/Cognitive Process 9
80-281 Language and Thought 9
82-280 Learning About Language Learning 9
82-383 Second Language Acquisition: Theories and Research 9
82-388 Understanding Second Language Fluency 9
82-585 Topics in Second Language Acquisition 9
85-354 Infant Language Development 9
85-421 Language and Thought 9

Area 2: Discourse, Society and Culture
76-385 Introduction to Discourse Analysis 9
or 76-484 Discourse Analysis 9
76-386 Language & Culture 9
80-283 Syntax and Discourse 9
82-273 Introduction to Japanese Language and Culture 9
82-283 Language Diversity & Cultural Identity 9
82-333 Introduction to Chinese Language and Culture Var.
The Major in Logic and Computation

Joel Smith, Director
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Email: joelms@cmu.edu
http://www. cmu. edu/dietrich/philosophy/undergraduate/logic-and-computation/

The Logic and Computation curriculum takes advantage of the preparation provided by the Dietrich College General Education Program in mathematics, philosophy, psychology, and statistics. It is flexible in that it permits students to focus on any of a number of areas including (but not limited to):
- computer science;
- language and information technology;
- artificial intelligence and cognitive science;
- logic and the foundations of mathematics;
- methodology and philosophy of science.

Students in the program take a common core of courses in logic, methodology, and computer science, together with an associated seminar in their senior year. The individual focus is achieved by selecting a sequence of four advanced and closely related courses. It is in this area of focus (or specialization) that students write their senior thesis under the supervision of a faculty member. A number of sample curricula are presented below.

The resulting education in logic, analytic philosophy, mathematics, statistics, and computer science enables students to pursue professional careers or graduate study. The analytic and communication skills developed in the major support a wide range of career choices, including those among the fields of technology, business, and law. Fields of graduate study for which students are well prepared include, for example, computer science, cognitive science, philosophy, logic, and linguistics.

Students who are interested in pursuing this major, or who are pursuing it already, should take note of the Cognitive Science major in the Department of Psychology. That major is so closely related that it is not difficult to pursue it as an additional major, and it provides an intellectually exciting complement.

Curriculum

Logic and Computation is a B.S. degree. In their freshman and sophomore years, students are expected to take three courses that provide preparation in computer science, mathematics, and statistics: 15-112 Fundamentals of Programming and Computer Science, 21-127 Concepts of Mathematics, 36-201 Statistical Reasoning and Practice (or 36-200 Reasoning with Data), 80-211 Logic and Mathematical Inquiry is part of the major's Core Requirements, but should be taken no later than the spring of the sophomore year. This also applies to the computer science sequence 15-122 and 15-150.

NOTE: Students should complete the prerequisites before their junior year. It is strongly recommended that students take 80-211 Logic and Mathematical Inquiry no later than the spring of their sophomore year and, if possible, also 15-122 and 15-150. However, with suitable planning and advice from the program director, it is possible to complete the program in two years, beginning in the junior year.

The course requirements for the major consist of seven core courses (including the Senior Thesis) and four electives. The core courses provide comprehensive background in logic, computability, and analytic philosophy. 80-310 Formal Logic and 80-150 Nature of Reason must be taken no later than the fall of the junior year. Four advanced electives are chosen in the area of focus, and should support independent research towards fulfilling the senior thesis requirement. In their senior year, students engage in original research under the supervision of a faculty advisor in 80-595 Senior Thesis. All courses, if taken at CMU, must be taken for a letter grade and passed with a grade of "C" or above. Students may double count any course for the major with another major or minor.

Prerequisites29 units

15-112 Fundamentals of Programming and Computer Science 12
21-127 Concepts of Mathematics 10
36-201 Statistical Reasoning and Practice 9
or 36-200 Reasoning with Data 9

Logic and Computation Core69–71 units

80-150 Nature of Reason 9
80-211 Logic and Mathematical Inquiry 9
80-310 Formal Logic 9
80-311 Undecidability and Incompleteness 9
15-122 Principles of Imperative Computation 10
15-150 Principles of Functional Programming 10
80-595 Senior Thesis Var.

Logic and Computation Electives36 units

Bearing in mind prerequisites, Logic and Computation majors must complete four advanced courses in areas that use logical and computational tools, such as philosophy, computer science, linguistics, mathematical logic, psychology, or statistics. The sequence of courses, mostly at the 300-level, must be selected in consultation with the program director.

Sample Curricula

Here are five samples of Logic and Computation curricula (beyond the core courses), each reflecting a different emphasis.

Sample 1. A student interested in Computer Science might take the following courses:

80-315 Modal Logic 9
80-413 Category Theory 9
15-312 Foundations of Programming Languages 12

80-383 Language in Use 9
82-388 Understanding Second Language Fluency 9

Electives

Take four additional electives. These can be additional courses from the Fundamental Skills courses or Breadth courses listed above, or any other course which is approved by the Director as a linguistics elective. Listed below are the additional electives taught on a regular basis.

Additional appropriate courses are offered irregularly or on a one-off basis. The Director will provide students with a list of possible electives each semester, and will assist students in selecting electives which are consistent with their goals and interests.

76-378 Literacy: Educational Theory and Community Practice 9
76-451 Language and Globalization 9
80-284 Invented Languages 9
80-286 Words and Word Formation: Introduction to Morphology 9
80-287 Historical and Comparative Linguistics 9
80-380 Philosophy of Language 9
80-382 Phonetics and Phonology II 9
80-384 Linguistics of Turkic Languages 9
80-385 Linguistics of Germanic Languages 9
82-373 Structure of the Japanese Language 9
11-411 Natural Language Processing 12
11-492 Speech Processing 12
11-716 Graduate Seminar on Dialog Processing 6
11-721 Grammars and Lexicons 12
11-722 Grammar Formalisms 12
11-761 Language and Statistics 12
11-762 Language and Statistics II 12

Language Requirement

Students must successfully complete two semesters of consecutive language courses. (Note that students may not 'test out' of this requirement. However, language courses taken at other institutions or as part of a study abroad program will typically substitute for a semester of language study.)

Senior Thesis [primary majors only]

Primary majors must complete a senior thesis (a workload equivalent to a 12-unit course) during their senior year. Topics must be approved by an advisor, who will work with the student and guide the thesis project.

Note

- All 11-xxx courses have significant Computer Science prerequisites. Interested students should check with the course instructor before registering.

Sample 1.

A student interested in Computer Science might take the following courses:

80-315 Modal Logic 9
80-413 Category Theory 9
15-312 Foundations of Programming Languages 12

Sample 2.

A student interested in Philosophy might take the following courses:

80-380 Philosophy of Language 9
80-382 Phonetics and Phonology II 9
80-384 Linguistics of Turkic Languages 9
80-385 Linguistics of Germanic Languages 9
82-373 Structure of the Japanese Language 9
11-411 Natural Language Processing 12
11-492 Speech Processing 12
11-716 Graduate Seminar on Dialog Processing 6
11-721 Grammars and Lexicons 12
11-722 Grammar Formalisms 12
11-761 Language and Statistics 12
11-762 Language and Statistics II 12

Sample 3.

A student interested in Psychology might take the following courses:

80-380 Philosophy of Language 9
80-382 Phonetics and Phonology II 9
80-384 Linguistics of Turkic Languages 9
80-385 Linguistics of Germanic Languages 9
82-373 Structure of the Japanese Language 9
11-411 Natural Language Processing 12
11-492 Speech Processing 12
11-716 Graduate Seminar on Dialog Processing 6
11-721 Grammars and Lexicons 12
11-722 Grammar Formalisms 12
11-761 Language and Statistics 12
11-762 Language and Statistics II 12

Sample 4.

A student interested in Logic and Computation might take the following courses:

80-383 Language in Use 9
82-388 Understanding Second Language Fluency 9
15-317 Constructive Logic

Sample 2.
A student interested in Language and Information Technology might take the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>80-280</td>
<td>Linguistic Analysis</td>
</tr>
<tr>
<td>80-281</td>
<td>Language and Thought</td>
</tr>
<tr>
<td>80-381</td>
<td>Meaning in Language</td>
</tr>
<tr>
<td>80-383</td>
<td>Language in Use</td>
</tr>
<tr>
<td>80-580</td>
<td>Seminar on the Philosophy of Language</td>
</tr>
</tbody>
</table>

Sample 3.
A student interested in Artificial Intelligence and Cognitive Science might take the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>80-314</td>
<td>Logic and Artificial Intelligence</td>
</tr>
<tr>
<td>80-315</td>
<td>Modal Logic</td>
</tr>
<tr>
<td>80-411</td>
<td>Proof Theory</td>
</tr>
<tr>
<td>85-412</td>
<td>Cognitive Modeling</td>
</tr>
</tbody>
</table>

Sample 4.
A student interested in Logic and the Foundations of Mathematics might consider the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>80-254</td>
<td>Analytic Philosophy</td>
</tr>
<tr>
<td>80-312</td>
<td>Philosophy of Mathematics</td>
</tr>
<tr>
<td>80-365</td>
<td>Ramsey</td>
</tr>
<tr>
<td>80-411</td>
<td>Proof Theory</td>
</tr>
<tr>
<td>80-413</td>
<td>Category Theory</td>
</tr>
</tbody>
</table>

Sample 5.
A student interested in Methodology might consider the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>80-220</td>
<td>Philosophy of Science</td>
</tr>
<tr>
<td>80-221</td>
<td>Philosophy of Social Science</td>
</tr>
<tr>
<td>80-321</td>
<td>Causation, Law, and Social Policy</td>
</tr>
<tr>
<td>36-309</td>
<td>Experimental Design for Behavioral and Social Sciences</td>
</tr>
</tbody>
</table>

Logic and Computation Degree Requirements (minimum)

Logic and Computation as a Second Major

The Logic and Computation major is also suitable as a second major for students in Dietrich College or for students in other colleges within the university. Non-Dietrich students interested in an additional major in Logic and Computation need to take only those courses in the Dietrich College General Education Program that are prerequisites to courses required in the major; all other Dietrich College General Education requirements are waived for these students. Depending on the student’s background, the requirements of the second major in Logic and Computation can be fulfilled with as few as five additional courses. The Philosophy Department does not limit the number of courses that can be counted for other majors and minors around the university.

The M.S. Program in Logic and Computation

The Department of Philosophy also offers a graduate M.S. degree in Logic and Computation, which culminates with the writing of a master’s thesis. It is ordinarily a two-year program, but students in the Logic and Computation major are able to complete the additional requirements in one year. Interested students are invited to contact the department for further information and to apply to the program in their senior year. Details can be found on the department’s website: http://www.cmu.edu/dietrich/philosophy/index.html.

The Major in Philosophy

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http://www.cmu.edu/dietrich/philosophy/undergraduate/philosophy

The Major in Philosophy is intended to be flexible and to facilitate additional majors in other fields (including majors with a strong professional focus). It provides students with a broad humanities education and sharpens their analytical skills. We encourage, but do not require, students to choose a thematic concentration through their electives. Sample curricula emphasizing Pre-Law, Metaphysics and Epistemology, Ethics and Social Philosophy, and Philosophy of Mind are suggested below. However, alternative emphases can be proposed and approved by the Director. The Major in Philosophy is a B.A. degree.

Curriculum

In addition to the general education requirements for the student's college, Philosophy primary majors and additional majors must complete 80-100 Introduction to Philosophy and nine Philosophy courses in the Areas listed below. The 80-100 requirement must be fulfilled before the first semester of the junior year. Only two of the remaining nine courses may be at the 100-level, and two of the nine courses must be at the 300-level or higher. All ten courses, if taken at CMU, must be taken for a letter grade and passed with a grade of 'C' or above. Courses from other universities, as well as an 80-100 skills test, may be substituted with permission of the Director. Students are to choose one course out of each of the Areas 1-4, two courses out of Area 5, and may freely select three courses in Area 6. Students may double count any course for the major with another major or minor. As per the requirement of Dietrich College, a student's Freshman Seminar course may not count toward the fulfillment of the major requirements.

Introduction to Philosophy 9 units

Area 1: Values and Normative Theory 9 units

Area 2: Philosophy of Mind/Language/Metaphysics 9 units

Area 3: Logic/Philosophy of Mathematics 9 units

The Major in Philosophy is intended to be flexible and to facilitate additional majors in other fields (including majors with a strong professional focus). It provides students with a broad humanities education and sharpens their analytical skills. We encourage, but do not require, students to choose a thematic concentration through their electives. Sample curricula emphasizing Pre-Law, Metaphysics and Epistemology, Ethics and Social Philosophy, and Philosophy of Mind are suggested below. However, alternative emphases can be proposed and approved by the Director. The Major in Philosophy is a B.A. degree.

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Area 1: Values and Normative Theory 9 units

Area 2: Philosophy of Mind/Language/Metaphysics 9 units

Area 3: Logic/Philosophy of Mathematics 9 units

The M.S. Program in Logic and Computation

The Department of Philosophy also offers a graduate M.S. degree in Logic and Computation, which culminates with the writing of a master's thesis. It is ordinarily a two-year program, but students in the Logic and Computation major are able to complete the additional requirements in one year. Interested students are invited to contact the department for further information and to apply to the program in their senior year. Details can be found on the department's website: http://www.cmu.edu/dietrich/philosophy/index.html.
For an emphasis on Law & Social Policy, a student might take:

Here are four sample curricula, reflecting different emphases.

### Sample Curricula

#### Area 1: Law and Social Policy

- **80-334** Social and Political Philosophy 9
- **80-180** Nature of Language 9
- **80-211** Logic and Mathematical Inquiry 9
- **80-208** Critical Thinking 9

#### Area 2: Ethics and Social Philosophy

- **80-310** Modern Philosophy 9
- **80-250** Ancient Philosophy 9
- **80-211** Logic and Mathematical Inquiry 9
- **80-201** Epistemology 9

#### Area 3: Philosophy of Mind

- **80-226** Pragmatism 9
- **80-253** Analytic Philosophy 9
- **80-371** Philosophy of Perception 9
- **80-322** Philosophy of Physics 9

#### Area 4: Philosophy of Science

- **80-220** Philosophy of Science 9
- **80-226** Revolutions in Science 9
- **80-221** Philosophy of Social Science 9
- **80-211** Logic and Mathematical Inquiry 9

### Additional Major

Students who want an additional major in Philosophy must fulfill the same departmental requirements as primary majors in Philosophy. Students can double count any course for the major with another major or minor.

### The M.A. Program in Philosophy

The Department of Philosophy also offers a graduate M.A. degree in Philosophy, which culminates with the writing of a master’s thesis. It is ordinarily a two-year program, but students in the Philosophy major are able to complete the additional requirements in one year. Interested students are invited to visit the department’s homepage for further information: [www.cmu.edu/dietrich/philosophy/](http://www.cmu.edu/dietrich/philosophy/).
Philosophy Department Minors

All majors in the Department allow for minors; in addition, there is a Minor in Ethics and an interdisciplinary minor in Linguistics. The requirements are again designed to be flexible and to allow students to tailor courses to their special interests, while providing some breadth.

The Minor in Ethics

With the explosive growth of science and technology have come both new possibilities and new problems. Developments in medicine, in biology, in chemistry, in nuclear engineering or in computer science all have costs as well as benefits, and they present us with many hard choices. Some of the hardest of these new problems are moral problems.

The Philosophy Department’s Minor in Ethics introduces students to central ethical concepts and theories proposed and defended by the great philosophers of the past; it provides an understanding of how these theories and concepts can be applied to practical problems. This background in ethical theory and its applications should help students to respond more sensitively and appropriately to the new and unavoidable ethical problems that technologies, businesses, unions, and branches of government must face.

**Curriculum**

Ethics minors must complete five philosophy courses in the areas listed below. All five required courses, if taken at CMU, must be taken for a letter grade and passed with a grade of "C" or above, except 80-294 Ethics Internship / Practicum, which may be taken pass/fail.

**Ethics Core Courses** 27 units

Complete three courses from any of the following areas with at least two courses at the 200-level or higher.

- 80-130 Introduction to Ethics 9
- 80-135 Introduction to Political Philosophy 9
- 80-136 Social Structure, Public Policy & Ethics 9
- 80-230 Ethical Theory 9
- 80-241 Ethical Judgments in Professional Life 9
- 80-242 Conflict and Dispute Resolution 9
- 80-243 Ethics of Leadership 9
- 80-244 Environmental Ethics 9
- 80-245 Medical Ethics 9
- 80-246 Moral Psychology 9
- 80-247 Ethics and Global Economics 9
- 80-248 Engineering Ethics 9
- 80-330 Research Ethics 9
- 80-333 Social and Political Philosophy 9
- 80-335 Deliberative Democracy: Theory and Practice 9
- 80-336 Philosophy of Law 9
- 80-348 Health Development and Human Rights 9
- 80-430 Ethics and Medical Research 9
- 80-431 Meta-ethics 9
- 80-447 Global Justice 9

**Ethics Electives** 18 units

Complete two courses at the 200-level or higher. These courses may be additional courses from Ethics Core list above. Other applicable philosophy courses include the following: 80-294 or 80-495

Appropriate courses in ethics from other departments may count with the permission of the faculty advisors for this minor.

*Courses typically only offered on the CMU-Q campus.

The Minor in Linguistics

The Interdepartmental Minor in Linguistics is jointly sponsored with the departments of English, Modern Languages, and Psychology. It synthesizes the linguistics related offerings in these departments and provides students with an academic experience that reflects both the interdisciplinary character of the subject and its cross-departmental representation in Dietrich College. Students who wish to receive a minor in Linguistics must complete six courses: the introductory linguistics course; two fundamental skills courses; and three additional electives. All courses counted towards the minor must be taken for a letter grade and passed with a grade of "C" or above.

**Introductory Course** 9 units

- 80-180 Nature of Language

**Fundamental Skills** 18 units

Take one course from two of the following core subject areas:

- Sounds 9
  - 80-282 Phonetics and Phonology I
- Structure 9
  - 76-389 Rhetorical Grammar
- Linguistic Analysis 9
  - 80-280
- Natural Language Syntax 9
  - 80-285
- Meaning 9
  - 80-381 Meaning in Language
- Language in Use 9
  - 80-383
- Discourse Analysis 9
  - 76-385
  - 76-484

**Electives** 27 units

Take three additional linguistics courses. These can be additional courses from the Fundamental Skills categories above, or any other course that is approved by the Director as a Linguistics elective. For electives taught on a regular basis, see the courses listed as Breadth or Electives in the Undergraduate Catalog for the Linguistics major.

The Minor in Logic and Computation

The Minor in Logic and Computation provides students with general course work in logic, the theory of computation, and philosophy. Students must complete six courses, among them the following three core courses.

**Logic and Computation Core Courses** 27 units

- 80-150 Nature of Reason 9
- 80-211 Logic and Mathematical Inquiry 9
- 80-310 Formal Logic 9
- 80-311 Undecidability and Incompleteness 9

**Logic and Computation Electives** 27 units

Students must take two courses in the Philosophy Department at the 300-level or higher, in subjects related to logic and computation, and an additional course at the 300-level or higher in an area that uses logical and computational tools, such as philosophy, computer science, linguistics, mathematics, psychology, or statistics. The choice of electives must be approved by the program director.

The Minor in Philosophy

The Minor in Philosophy allows students to complement their primary majors with a broad philosophical grounding.

**Logic/Methodology Requirements** 9 units

Complete one course:

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<th>Course</th>
<th>Units</th>
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<tr>
<td>80-110</td>
<td>9</td>
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<td>Nature of Mathematical Reasoning</td>
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<td>80-210</td>
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<td>Logic and Proofs</td>
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<td>80-211</td>
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<td>Logic and Mathematical Inquiry</td>
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<td>80-212</td>
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<td>Arguments and Logical Analysis</td>
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<td>Philosophy of Science</td>
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<td>80-221</td>
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<td>Philosophy of Social Science</td>
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<td>80-222</td>
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<td>Measurement and Methodology</td>
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<td>Causality and Probability</td>
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<td>Revolutions in Science</td>
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<td>Philosophy of Mathematics</td>
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<td>80-314</td>
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<td>Logic and Artificial Intelligence</td>
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<tr>
<td>80-315</td>
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<tr>
<td>Modal Logic</td>
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History of Philosophy Requirements 18 units

Complete two courses: Units
80-150 Nature of Reason 9
80-226 Revolutions in Science 9
80-250 Ancient Philosophy 9
80-251 Modern Philosophy 9
80-252 Kant 9
80-253 Continental Philosophy 9
80-254 Analytic Philosophy 9
80-255 Pragmatism 9
80-256 Modern Moral Philosophy 9
80-257 Nietzsche 9
80-261 Empiricism and Rationalism 9
80-264 William James and Philosophical Psychology 9
80-358 Hume 9
80-362 Russell 9
80-363 19th Century Foundations of Science 9

Philosophy Electives 18 units

Complete 18 units in the Philosophy department at the 200-level or higher.

The Honors Program

The Dietrich College Senior Honors Program provides recognition of outstanding performance by students majoring in Philosophy, Logic and Computation or Ethics, History, and Public Policy. Students have the opportunity to develop their skills and to apply their knowledge through completion of an honors thesis in their senior year. By completing the thesis, students earn 18 units of credit and qualify for graduation with College Honors. To qualify for the honors program, students must maintain a quality point average of at least 3.50 in the major and 3.25 overall, and be invited by the department to become a participant.

Undergraduate Research Fellows

Qualified upper level undergraduates, preferably majors in one of the Philosophy Department’s programs, may apply to serve in their junior or senior years as fellows in the Laboratory for Symbolic and Educational Computing (LSEC). Applications are reviewed in the fall. Visit LSEC from the Department’s website, http://www.cmu.edu/dietrich/philosophy/research/lsec/fellowships.html, or contact Professors Joseph Ramsey or Wilfried Seig for additional information.

Faculty

JEREMY AVIGAD, Professor of Philosophy – Ph.D., University of California, Berkeley; Carnegie Mellon, 1996–.

STEVEN AWODEY, Professor of Philosophy – Ph.D., University of Chicago; Carnegie Mellon, 1997–.

ADAM BJORNDAHL, Assistant Professor of Philosophy – Ph.D., Cornell University; Carnegie Mellon, 2014–.

DAVID DANKS, L.L. Thurstone Professor of Philosophy & Psychology, Department Head – Ph.D., University of California, San Diego; Carnegie Mellon, 2003–.

B. R. GEORGE, Assistant Professor of Philosophy – Ph.D., University of California, Los Angeles; Carnegie Mellon, 2014–.

CLARK GLYMOUR, Alumni University Professor of Philosophy – Ph.D., Indiana University; Carnegie Mellon, 1984–.

MARALEE HARRELL, Teaching Professor of Philosophy – Ph.D., University of California, San Diego; Carnegie Mellon, 2003–.

KEVIN T. KELLY, Professor of Philosophy – Ph.D., University of Pittsburgh; Carnegie Mellon, 1985–.

ALEX JOHN LONDON, Clara L. West Professor of Ethics and Philosophy – Ph.D., University of Virginia; Carnegie Mellon, 2000–.

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TEDDY I. SEIDENFELD, Herbert A. Simon Professor of Philosophy and Statistics – Ph.D., Columbia University; Carnegie Mellon, 1985–.

WILFRIED SIEG, Patrick Suppes Professor of Philosophy – Ph.D., Stanford University; Carnegie Mellon, 1985–.

MANDY SIMONS, Professor of Philosophy – Ph.D., Cornell University; Carnegie Mellon, 1998–.

JOEL SMITH, Distinguished Career Teaching Professor of Philosophy – Ph.D., University of Pittsburgh; Carnegie Mellon, 2000–.

PETER L. SPIRTES, Professor of Philosophy – Ph.D., University of Pittsburgh; Carnegie Mellon, 1987–.

DANIELLE WENNER, Assistant Professor of Philosophy – Ph.D., Rice University; Carnegie Mellon, 2013–.

THOMAS WERNER, Assistant Teaching Professor of Philosophy – Ph.D., Rutgers University; Carnegie Mellon, 2003–.

KUN ZHANG, Assistant Professor of Philosophy – Ph.D., The Chinese University of Hong Kong; Carnegie Mellon, 2015–.

KEVIN ZOLLMAN, Associate Professor of Philosophy – Ph.D., University of California, Irvine; Carnegie Mellon, 2009–.

Special Faculty

CHRISTINA BJORNDAHL, Teaching Instructor – Ph.D. Candidate, Cornell University; Carnegie Mellon, 2014–.

DAVID GRAY, Assistant Teaching Professor of Philosophy, Carnegie Mellon-Qatar – Ph.D., Carnegie Mellon University; Carnegie Mellon, 2009–.

DERRICK GRAY, Teaching Instructor – Ph.D., Rice University; Carnegie Mellon, 2013–.

JOSEPH RAMSEY, Director of Research Computing – Ph.D., University of California, San Diego; Carnegie Mellon, 2006–.

Affiliated Faculty

WAYNE WU, Associate Professor and Associate Director of CNBC – Ph.D., University of California, Berkeley; Carnegie Mellon, 2010–.

Emeriti Faculty

ROBERT CAVALIER, Teaching Professor – Ph.D., Duquesne University; Carnegie Mellon, 1987–.

DANA S. SCOTT, Hillman University Professor of Mathematical Logic, Computer Science and Philosophy (Emeritus) – Ph.D., Princeton University; Carnegie Mellon, 1981–.