Department of Philosophy

The Major in Ethics, History, and Public Policy

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The B.A./B.S. in Ethics, History, and Public Policy (EHPP) 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 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. Foundations of Public Policy 9 units

Choose one 9-unit course from the list below.

73-102 Principles of Microeconomics 9
84-104 Decision Processes in American Political Institutions 9
84-110 Foundations of Political Economy 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)
79-204 American Environmental History 9
79-231 American Civil Rights Movement: From Garveyism to Black Power 9
79-240 Development of American Culture 9
79-242 African American History: Reconstruction to the Present 9
79-244 Women in American History 9
79-245 Capitalism and Individualism in American Culture 9
79-248 U.S. Constitution & the Presidency 9
79-249 Politics and Social Change in 20th Century America 9
79-291 Innovation and Entertainment: A Business History of American Popular Culture 9
Non-U.S. History (9 units)
79-202  Flesh and Spirit: Early Modern Europe, 1400-1750 9
79-203  The Other Europes: The Habsburgs, Communism, & Central/Eastern Europe, 1740-1990 9
79-205  20th Century Europe 9
79-223  Mexico: From the Aztec Empire to the Drug War 9
79-226  African History: Earliest Times to 1780 9
79-261  The Last Emperors: Chinese History and Society, 1600-1900 9
79-227  Modern Africa: The Slave Trade to the End of Apartheid 9
79-229  The Origins of the Palestinian-Israeli Conflict, 1880-1948 9
79-230  Arab-Israeli Conflict Since 1948 9
79-237  Comparative Slavery 9
79-262  Modern China: From the Birth of Mao ... to Now 9
79-264  Tibet and China: History and Propaganda 6
79-265  Russian History: Game of Thrones 9
79-266  Russian History and Revolutionary Socialism 9
79-307  Religion and Politics in the Middle East 9

History Elective (9 units)
Take at least 9 additional units in the History Department with course number 79-200 or above. The following courses may not count: 79-400, 79-420, 79-449, 79-491, 79-505, 79-506

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 the Philosophy Core.

Ethics (9 units)
80-130  Introduction to Ethics 9
80-330  Ethical Theory 9

Political Philosophy (9 units)
80-135  Introduction to Political Philosophy 9
80-335  Social and Political Philosophy 9

Foundations of Social Science (9 units)
80-221  Philosophy of Social Science 9
80-324  Philosophy of Economics 9

Applied Philosophy (9 units)
80-136  Social Structure, Public Policy & Ethics 9
80-244  Environmental Ethics 9
80-245  Medical Ethics 9
80-249  AI, Society, and Humanity 9
80-336  Philosophy of Law 9
80-348  Health, Human Rights, and International Development 9
80-447  Global Justice 9

IV. Senior Capstone Project Course 12 units
79-449  EHPP Project Course [cross-listed] 12
80-449  EHPP Project Course [cross-listed] 12

The Ethics, History and Public Policy Project Course is required for the Ethics, History and Public Policy major and is taken in the fall semester of the senior year. In this capstone course, Ethics, History and Public Policy majors carry out a collaborative research project that examines a compelling current policy issue that can be illuminated with historical research and philosophical and policy analysis. The students develop an original research report based on both archival and contemporary policy analysis and they present their results to a client organization in the community.

V. Elective Courses 27 units
Choose any three courses (at least 27 units) 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 Academic Program Manager.

Engineering and Public Policy (some courses have prerequisites; see EPP catalog listing)
19-424  Energy and the Environment 9

Business Administration
70-311  Organizational Behavior 9
70-321  Negotiation and Conflict Resolution 9
70-332  Business, Society and Ethics 9
70-364  Business Law 9
70-365  International Trade and International Law 9
70-430  International Management 9

Economics (some courses have prerequisites; see Economics catalog listing)
73-352  Public Economics 9
73-359  Benefit-Cost Analysis 9
73-365  Firms, Market Structures, and Strategy 9
73-408  Law and Economics 9
73-476  American Economic History 9

English
76-492  Rhetoric of Public Policy 9

History
Courses from the EPP History Core (above) may be taken as electives only if they are not being used to fulfill the core requirement. Double counting is not permitted.
79-145  Genocide and Weapons of Mass Destruction 9
79-189  History of Democracy: Thinking Beyond the Self 9
79-233  The United States and the Middle East since 1945 9
79-234  Technology and Society 9
79-240  Development of American Culture 9
79-242  African American History: Reconstruction to the Present 9
79-249  Politics and Social Change in 20th Century America 9
79-250  Voting Rights: An Unexpected History 9
79-261  The Last Emperors: Chinese History and Society, 1600-1900 9
79-265  Russian History: Game of Thrones 9
79-266  Russian History and Revolutionary Socialism 9
79-267  The Soviet Union in World War II: Military, Political, and Social History 9
79-288  Bananas, Baseball, and Borders: Latin America and the United States 9
79-289  Animal Planet: An Environmental History of People and Animals 9
79-301  History of Surveillance: From the Plantation to Data Capitalism 6
79-302  Killer Robots: The Ethics, Law, and Politics of Lethal Autonomous Weapons Systems 6
79-303  Pittsburgh and the Transformation of Modern Urban America 6
79-305  Moneyball Nation: Data in American Life 9
79-315  Thirsty Planet: The Politics of Water in Global Perspective 9
79-320  Women, Politics, and Protest 9
79-322  Stalin and the Great Terror 9
79-325  U.S. Gay and Lesbian History 6
79-331  Body Politics: Women and Health in America 9
79-334  Climate Change and Climate Justice: Global Perspectives 6
79-336  Introduction to Environmental Ideas 9
79-338  History of Education in America 9
79-339  Juvenile Delinquency & Film: From Soul of Youth (1920) to West Side Story (1961) 6
Public Policy.

The B.A./B.S. in Ethics, History, and Public Policy may be scheduled as an optional major in consultation with the Director of Ethics, History, and Public Policy.

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.

- 80-130 Introduction to Ethics 9
- 80-135 Introduction to Political Philosophy 9
- 80-136 Social Structure, Public Policy & Ethics 9
- 80-221 Philosophy of Social Science 9
- 80-244 Environmental Ethics 9
- 80-245 Medical Ethics 9
- 80-256 Modern Moral Philosophy 9
- 80-305 Decision Theory 9
- 80-330 Ethical Theory 9
- 80-335 Social and Political Philosophy 9
- 80-336 Philosophy of Law 9
- 80-405 Game Theory 9
- 80-447 Global Justice 9

Institute for Politics and Strategy

- 84-310 International Political Economy 9
- 84-380 US Grand Strategy 9
- 84-393 Legislative Decision Making: US Congress 6
- 84-402 Judicial Politics and Behavior 9

Social and Decision Sciences

- 88-223 Decision Analysis 12
- 88-281 Topics in Law: 1st Amendment 9
- 88-284 Topics of Law: The Bill of Rights 9
- 88-444 Public Policy and Regulations 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.

Elective Courses

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.

- 79-340 Juvenile Delinquency & Film: From "Boyz N the Hood"(1991) to "The Wire"(2002-08) 6
- 79-342 Introduction to Science and Technology Studies 9
- 79-343 Education, Democracy, and Civil Rights 9
- 79-349 United States and the Holocaust 6
- 79-368 Un-natural Disasters: Societies and Environmental Hazards in Global Perspective 6
- 79-371 African American Urban History 9
- 79-370 Technology in the United States 9
- 79-374 Inequality, Social Justice, and the Black Urban Experience: 1930s to 2010s 9
- 79-381 Energy and Empire: How Fossil Fuels Changed the World 9

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.

- 80-130 Introduction to Ethics 9
- 80-135 Introduction to Political Philosophy 9
- 80-136 Social Structure, Public Policy & Ethics 9
- 80-221 Philosophy of Social Science 9
- 80-244 Environmental Ethics 9
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Social and Decision Sciences

- 88-223 Decision Analysis 12
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- 88-444 Public Policy and Regulations 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.
The Major in Logic and Computation

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The Bachelor of Science in 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;
- artificial intelligence and cognitive science;
- logic and the foundations of mathematics;
- methodology and philosophy of science.

Curriculum

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. Students in their first year and sophomore year, are expected to take three courses that provide preparation in computer science, mathematics, and statistics. Four advanced electives are chosen in the area of focus, as described below in the sample curricula, and should support independent research towards fulfilling the senior thesis requirement. In their senior year, Primary and Additional Majors in Logic and Computation will engage in original research under the supervision of a faculty advisor in 80-595 Senior Thesis (a workload equivalent of 12 units). Students are responsible for identifying a thesis topic and securing a faculty advisor prior to the start of the semester in which they plan to complete the thesis. Note: Students should work with the Academic Program Manager during their junior year to begin the process of identifying their topic and potential advisors. However, with suitable planning and advice from the Academic Program Manager, it is possible to complete the program in two years, beginning in the junior year.

All courses, if taken at Carnegie Mellon University, 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. If you are interested in obtaining an additional major in Linguistics, please reach out to the Academic Program Manager, Philosophy Department.

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>31 units</th>
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<tbody>
<tr>
<td>15-112</td>
<td>Fundamentals of Programming and Computer Science</td>
</tr>
<tr>
<td>21-127</td>
<td>Concepts of Mathematics</td>
</tr>
<tr>
<td>36-200</td>
<td>Reasoning with Data</td>
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<tr>
<td>or 36-201</td>
<td>Statistical Reasoning and Practice</td>
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Logic and Computation Core

<table>
<thead>
<tr>
<th>80-150</th>
<th>Nature of Reason</th>
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| *Students should complete before their junior year.

Logic and Computation Electives

<table>
<thead>
<tr>
<th>80-211</th>
<th>Logic and Mathematical Inquiry</th>
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<tbody>
<tr>
<td>80-310</td>
<td>Formal Logic</td>
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<td>*Students should complete before their junior year.</td>
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<tr>
<td>80-311</td>
<td>Undecidability and Incompleteness</td>
</tr>
<tr>
<td>15-122</td>
<td>Principles of Imperative Computation</td>
</tr>
<tr>
<td>*Students should complete this prerequisite before their junior year.</td>
<td></td>
</tr>
<tr>
<td>15-150</td>
<td>Principles of Functional Programming</td>
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<tr>
<td>*Students should complete this prerequisite before their junior year.</td>
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</tr>
<tr>
<td>80-595</td>
<td>Senior Thesis</td>
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<td>Var.</td>
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Additional Major in Linguistics

The Linguistics additional major requires a total of 13 courses. This includes 2 semesters of language study for all majors. At least three courses (not including specific language courses) must be at the 300-level or higher. Additional majors are not required to write a thesis but must take four electives (36 or more units). 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
Sample Curricula

Below are four samples of Logic and Computation curricula (beyond the core courses), each reflecting a different emphasis: Computer Science, Language and Information Technology, Artificial Intelligence and Cognitive Science, Logic and the Foundations of Mathematics, and Methodology.

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

- 80-315 Modal Logic
- 80-413 Category Theory
- 15-312 Foundations of Programming Languages
- 15-317 Constructive Logic

Sample 2.
A student interested in Artificial Intelligence and Cognitive Science might take the following courses:

- 80-249 AI, Society, and Humanity
- 80-314 Causal Discovery, Statistics, and Machine Learning
- 80-315 Modal Logic
- 80-411 Proof Theory
- 85-412 Cognitive Modeling

Note: If you are a Cognitive Science major (https://www.cmu.edu/dietrich/psychology/undergraduate/prospective-students/academics/cognitive-science/) major (Department of Psychology) this additional major would complement your coursework.

Sample 3.
A student interested in Logic and the Foundations of Mathematics might consider the following courses:

- 80-254 Analytic Philosophy
- 80-312 Mathematical Revolutions
- 80-411 Proof Theory
- 80-413 Category Theory

Sample 4.
A student interested in Methodology might consider the following courses:

- 80-220 Philosophy of Science
- 80-221 Philosophy of Social Science
- 36-309 Experimental Design for Behavioral & Social Sciences
- 80-305 Decision Theory

Additional major in Logic and Computation

The Logic and Computation major is also suitable as an additional 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 additional 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. In their senior year, the additional major in Logic and Computation will write a thesis under the supervision of a faculty advisor.

The M.S. Program in Logic, Computation & methodology

The Department of Philosophy also offers a graduate M.S. degree in Logic and Computation & Methodology, 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 in the 5th-year Master’s program (https://www.cmu.edu/dietrich/philosophy/graduate/5th-year-masters.html) should contact the Academic Program Manager for more information on how to apply.

The Major in Philosophy

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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 humanity 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 Academic Program Manager. 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 Introduction to Philosophy 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. 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 Grand Challenge First-Year Seminar course may not count toward the fulfillment of the major requirements.

<table>
<thead>
<tr>
<th>Introduction to Philosophy</th>
<th>9 units</th>
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<tbody>
<tr>
<td>80-100</td>
<td>Introduction to Philosophy</td>
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Area 1: Values and Normative Theory

<table>
<thead>
<tr>
<th>Introduction to Ethics</th>
<th>9 units</th>
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<tbody>
<tr>
<td>80-130</td>
<td>Introduction to Ethics</td>
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<tr>
<td>80-135</td>
<td>Introduction to Political Philosophy</td>
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<tr>
<td>80-136</td>
<td>Social Structure, Public Policy &amp; Ethics</td>
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<td>80-244</td>
<td>Environmental Ethics</td>
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<td>80-245</td>
<td>Medical Ethics</td>
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<td>80-246</td>
<td>Moral Philosophy</td>
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<tr>
<td>80-248</td>
<td>Engineering Ethics</td>
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<tr>
<td>80-249</td>
<td>AI, Society, and Humanity</td>
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<tr>
<td>80-330</td>
<td>Ethical Theory</td>
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<tr>
<td>80-335</td>
<td>Social and Political Philosophy</td>
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<td>80-336</td>
<td>Philosophy of Law</td>
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<td>80-348</td>
<td>Health, Human Rights, and International Development</td>
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<td>80-447</td>
<td>Global Justice</td>
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Area 2: Philosophy of Mind/Language/Metaphysics

<table>
<thead>
<tr>
<th>Philosophy of Language</th>
<th>9 units</th>
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<tbody>
<tr>
<td>80-180</td>
<td>Nature of Language</td>
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<tr>
<td>80-270</td>
<td>Problems of Mind and Body: Meaning and Doing</td>
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<td>80-271</td>
<td>Mind and Body: The Objective and the Subjective</td>
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<tr>
<td>80-276</td>
<td>Philosophy of Religion</td>
</tr>
<tr>
<td>80-280</td>
<td>Linguistic Analysis</td>
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<tr>
<td>80-281</td>
<td>Language and Thought</td>
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<tr>
<td>80-282</td>
<td>Phonetics and Phonology I</td>
</tr>
<tr>
<td>80-283</td>
<td>It Matters How You Say It</td>
</tr>
<tr>
<td>80-284</td>
<td>Invented Languages</td>
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<tr>
<td>80-285</td>
<td>Natural Language Syntax</td>
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<tr>
<td>80-286</td>
<td>Words and Word Formation: Introduction to Morphology</td>
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<tr>
<td>80-287</td>
<td>Language Variation and Change</td>
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<tr>
<td>80-288</td>
<td>Intonation: Transcription and Analysis</td>
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<tr>
<td>80-380</td>
<td>Philosophy of Language</td>
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<tr>
<td>80-381</td>
<td>Meaning in Language</td>
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<tr>
<td>80-382</td>
<td>Phonetics and Phonology II</td>
</tr>
<tr>
<td>80-383</td>
<td>Language in Use</td>
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<tr>
<td>80-384</td>
<td>Linguistics of Turkic Languages</td>
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<td>80-385</td>
<td>Linguistics of Germanic Languages</td>
</tr>
<tr>
<td>80-388</td>
<td>Linguistic Typology: Diversity and Universals</td>
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<tr>
<td>80-580</td>
<td>Seminar on the Philosophy of Language</td>
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</tbody>
</table>
Area 3: Logic/Philosophy of Mathematics  
9 units
One of the following:
80-110  Nature of Mathematical Reasoning  
80-210  Logic and Proofs  
80-211  Logic and Mathematical Inquiry  
80-212  Arguments and Logical Analysis  
80-310  Formal Logic  
80-311  Undecidability and Incompleteness  
80-312  Mathematical Revolutions  
80-314  Causal Discovery, Statistics, and Machine Learning  
80-315  Modal Logic  
80-411  Proof Theory  
80-413  Category Theory  
80-419  Interactive Theorem Proving  
80-513  Seminar on Philosophy of Mathematics  
80-514  Categorical Logic  
80-518  Seminar on Topics in Logic  

Area 4: Epistemology  
9 units
One of the following:
80-150  Nature of Reason  
80-201  Knowledge and Justified Belief  
80-208  Critical Thinking  
80-220  Philosophy of Science  
80-221  Philosophy of Social Science  
80-222  Causality and Probability  
80-226  Revolutions in Science  
80-305  Decision Theory  
80-324  Philosophy of Economics  
80-327  Philosophy of Neuroscience  
80-405  Game Theory  
80-515  Seminar on the Foundations of Statistics  
80-516  Causality and Machine Learning  
80-520  Seminar on Philosophy Science  
80-521  Seminar on Formal Epistemology: Belief and Evidence  

Area 5: History of Philosophy  
18 units
Two of the following:
80-150  Nature of Reason  
80-226  Revolutions in Science  
80-250  Ancient Philosophy  
80-251  Modern Philosophy  
80-252  Kant  
80-253  Continental Philosophy  
80-254  Analytic Philosophy  
80-255  Pragmatism  
80-261  Experience, Reason, and Truth  
80-358  Hume  
80-362  Russell  
80-363  19th Century Foundations of Science  
80-365  Ramsey  

Area 6: Elective  
27 units
Three other philosophy courses, or appropriate courses from other departments, with the permission of the Academic Program Manager.

Sample Curricula
Here are four sample curricula, reflecting different emphases.

1. For an emphasis on Law & Social Policy, a student might take:
   Area 1
   80-335  Social and Political Philosophy  
   Area 2
   80-180  Nature of Language  
   Area 3
   80-211  Logic and Mathematical Inquiry  

2. For an emphasis on Philosophy of Science, a student might take:
   Area 1
   80-136  Social Structure, Public Policy & Ethics  
   Area 2
   80-371  Philosophy of Perception  
   Area 3
   80-211  Logic and Mathematical Inquiry  
   Area 4
   80-220  Philosophy of Science  
   or 80-221  Philosophy of Social Science  

3. For an emphasis on Ethics and Social Philosophy, a student might take:
   Area 1
   80-130  Introduction to Ethics  
   Area 2
   80-276  Philosophy of Religion  
   Area 3
   80-211  Logic and Mathematical Inquiry  
   Area 4
   80-221  Philosophy of Social Science  

4. For an emphasis on Philosophy of Mind, a student might take:
   Area 1
   80-130  Introduction to Ethics  
   Area 2
   80-270  Problems of Mind and Body: Meaning and Doing  
   Area 3
   80-211  Logic and Mathematical Inquiry  
   Area 4
   80-201  Knowledge and Justified Belief  
   Area 5
   80-251  Modern Philosophy  
   Area 6
   80-521  Seminar on Formal Epistemology: Belief and Evidence  

Additional Major
Students who wish to pursue an additional major in Philosophy must fulfill the same departmental requirements as primary majors in Philosophy.
The M.A. Program in Philosophy

The M.A. Program in Philosophy provides exciting opportunities to pursue post-graduate studies in Philosophy for students with a degree in Philosophy who wish to continue their work in a more focused and advanced way, as well as for students with a degree in another field who wish to add a concentration in Philosophy. Two areas of specialization are offered in line with the distinctive strengths of the Philosophy Department that are not reflected in its other graduate degree programs, namely Ethics, Social and Political Philosophy, and Philosophy of Science. The latter specialization offers emphasis in Mathematics, Psychology, Physics, and the Social Sciences.

The course of study for the 5-year M.A. in Philosophy is very flexible, and can be tailored to a student's interests and background. For more information, please contact the Academic Program Manager.

Philosophy Department Minors

The Philosophy Department offers five minors: Ethics, Linguistics, Logic & Computation, Philosophy, and Societal & Human Impacts of Future Technologies (SHIFT). The requirements are designed to be flexible and to allow students to tailor courses to their special interests, while providing some breadth.

The Minor in Ethics

The 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.

Ethics minors must complete five philosophy courses in the areas listed below. All five required courses must be taken for a letter grade and passed with a grade of “C” or above, except 80-294 Ethics Internship or 80-500 Undergraduate Internship which may be taken pass/fail.

Ethics Core Courses

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
- **80-135** Introduction to Political Philosophy
- **80-136** Social Structure, Public Policy & Ethics
- **80-244** Environmental Ethics
- **80-245** Medical Ethics
- **80-246** Moral Psychology
- **80-249** AI, Society, and Humanity
- **80-330** Ethical Theory
- **80-335** Social and Political Philosophy
- **80-336** Philosophy of Law
- **80-348** Health, Human Rights, and International Development
- **80-447** Global Justice

Ethics Electives

Complete two courses at the 200-level or higher. These courses may be additional courses from Ethics Core list above.

- **80-244** Environmental Ethics
- **80-245** Medical Ethics
- **80-246** Moral Psychology
- **80-294** Ethics Internship
- **80-330** Ethical Theory
- **80-335** Social and Political Philosophy
- **80-336** Philosophy of Law
- **80-348** Health, Human Rights, and International Development
- **80-447** Global Justice
- **80-495** Independent Study

The Minor in Linguistics

Linguistics is the scientific study of human language. The central goal of the Linguistics Program is to provide students with the analytical skills and linguistic concepts needed to understand language scientifically, whether formally, as researchers, or informally, as participants in daily linguistic interactions. The foundation of the Linguistics Minor is a set of rigorous core courses, informed by contemporary approaches to the study of linguistic form and meaning. The Core courses cover the principal domains of linguistic analysis: phonetics and phonology, syntax, and meaning. Students then move on to the Extended Core, which includes more advanced courses as well as courses on a wider range of topics, such as intonation and language variation. All courses counted towards the minor must be taken for a letter grade and passed with a grade of “C” or above.

Core (27 units)

- **80-282** Phonetics and Phonology I
- **80-280** Linguistic Analysis
- **80-285** Natural Language Syntax
- **80-381** Meaning in Language
- **80-383** Language in Use

Extended Core: Choose 3 courses (27 units) from the Extended Core and/or additional courses from Core.

- **80-283** It Matters How You Say It
- **80-284** Invented Languages
- **80-286** Words and Word Formation: Introduction to Morphology
- **80-287** Language Variation and Change
- **80-288** Intonation: Transcription and Analysis
- **80-382** Phonetics and Phonology II
- **80-384** Linguistics of Turkic Languages
- **80-385** Linguistics of Germanic Languages
- **80-388** Linguistic Typology: Diversity and Universals
- **80-488** Acoustics of Human Speech: Theory, Data, and Analysis

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. All courses counted towards the minor must be taken for a letter grade and passed with a grade of “C” or above.

Logic and Computation Core Courses

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

Logic and Computation Electives

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 Academic Program Manager.

The Minor in Philosophy

The Minor in Philosophy requires five courses and gives students a broad philosophical foundation, requiring one course in Logic/Methodology, two courses in the History of Philosophy and two Philosophy electives. The minor complements any primary major from around the University. All courses
counted towards the minor must be taken for a letter grade and passed with a grade of "C" or above.

Logic/Methodology Requirements 9 units
Complete one course:
80-110 Nature of Mathematical Reasoning 9
80-210 Logic and Proofs 9
80-211 Logic and Mathematical Inquiry 9
80-214 Computing, AI, and Philosophy 9
80-220 Philosophy of Science 9
80-221 Philosophy of Social Science 9
80-222 Measurement and Methodology 9
80-223 Causality and Probability 9
80-226 Revolutions in Science 9
80-310 Formal Logic 9
80-311 Undecidability and Incompleteness 9
80-312 Mathematical Revolutions 9
80-314 Causal Discovery, Statistics, and Machine Learning 9
80-315 Modal Logic 9
80-324 Philosophy of Economics 9
80-365 Ramsey 9
80-411 Proof Theory 9
80-413 Category Theory 9
80-513 Seminar on Philosophy of Mathematics 9
80-514 Categorical Logic 9
80-515 Seminar on the Foundations of Statistics 9
80-516 Causality and Machine Learning 9
80-520 Seminar on Philosophy Science 9
80-521 Seminar on Formal Epistemology: Belief and Evidence Var.

History of Philosophy Requirements 18 units
Complete two courses:
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
80-261 Experience, Reason, and Truth 9
80-358 Hume 9
80-362 Russell 9
80-363 19th Century Foundations of Science 9
80-365 Ramsey 9

Philosophy Electives 18 units
Students must complete 18 units in the Philosophy department at the 200-level or higher. The choice of electives must be approved by the Academic Program Manager.

Note: Five of the six Area Courses must be taken in different departments

Technology area (18 units)
Courses that build basic technological competence, and teach concepts & frameworks that provide high-level understanding of computational technologies, including their possibilities and limits.

Technology area
05-317 Design of Artificial Intelligence Products 12
05-318 Human AI Interaction 12
05-320 Social Web 12
05-452 Service Design 12
15-110 Principles of Computing 10
15-112 Fundamentals of Programming and Computer Science 12
16-467 Human Robot Interaction 12
17-303 Cryptocurrencies, Blockchains and Applications Var.
17-313 Foundations of Software Engineering 12
17-331 Information Security, Privacy, and Policy 12
17-333 Privacy Policy, Law, and Technology 9
17-355 Program Analysis 12
36-201 Statistical Reasoning and Practice 9
36-202 Methods for Statistics & Data Science 9
67-250 The Information Systems Milieu 9
88-300 Programming and Data Analysis for Social Scientists 9

Social & Behavioral Sciences area (18 units)
Courses that teach the concepts and frameworks of social & behavioral sciences (e.g., economics, psychology, sociology), including methods and analyses such as experimental design and quantitative & qualitative data analysis.

Social & Behavioral Science area
05-413 Human Factors 9
17-224 Influence, Persuasion, and Manipulation Online 9
36-200 Reasoning with Data 9
70-311 Organizational Behavior 9
70-321 Negotiation and Conflict Resolution 9
70-341 Team Dynamics and Leadership 9
73-102 Principles of Microeconomics 9
73-103 Principles of Macroeconomics 9
84-265 Political Science Research Methods 9
84-369 Decision Science for International Relations 9
88-406 Behavioral Economics @ Work 9
88-418 Negotiation: Strategies and Behavioral Insights 9
88-419 International Negotiation 9
88-435 Decision Science and Policy 9

Ethics, Policy & Design Area (18 units)
Courses that teach core concepts and frameworks to address and analyze ethical, policy, and design challenges relevant to current and near-future computational technologies.

Ethics, Policy & Design Area
05-413 Human Factors 9
08-200 Ethics and Policy Issues in Computing 9
16-161 ROB Freshman Seminar: Artificial Intelligence and Humanity 9
17-224 Influence, Persuasion, and Manipulation Online 9
36-200 Reasoning with Data 9
51-173 Design Center: Human Experience in Design 9
51-241 How People Work 9
51-371 Futures I 4.5
51-373 Futures II 4.5
51-382 Design Center: Design for Social Innovation 9
70-311 Organizational Behavior 9
70-321 Negotiation and Conflict Resolution 9
70-332 Business, Society and Ethics 9
70-341 Team Dynamics and Leadership 9
70-364 Business Law 9
73-102 Principles of Microeconomics 9
73-103 Principles of Macroeconomics 9
79-234 Technology and Society 9

The Minor in Societal & Human Impacts of Future Technologies (SHIFT)
Students pursuing the SHIFT minor will gain the skills, knowledge, and experience to successfully take on roles in integrated, multidisciplinary analyses of current and near-future computational technologies. The SHIFT minor requires eight total courses, with no limit to double-counting with other majors or minors. All courses counted towards the minor must be taken for a letter grade and passed with a grade of "C" or above.

Core Courses (2 courses, 18 units total)
80-249 AI, Society, and Humanity 9
80-445 Shift Capstone Experience Var.

Area Courses (6 courses, 54 units total)
The Senior Honors Program
The Dietrich College Senior Honors Program (https://www.cmu.edu/dietrich/students/undergraduate/programs/senior-honors/) provides recognition of outstanding performance by students majoring in Philosophy, Logic and Computation, Linguistics, 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. In late spring, Dietrich College Senior Honors students are required to fulfill a presentation requirement by participating in the University’s Meeting of the Minds Undergraduate Research Symposium (https://www.cmu.edu/uro/MoM/). This may be done as a poster presentation, or formal presentation, about their thesis projects. 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.

Philosophy 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 Computation (LSEC). Applications are reviewed in the fall. Visit LSEC from the Department’s website at www.cmu.edu/dietrich/philosophy/research/lsec/fellowships.html (http://www.cmu.edu/dietrich/philosophy/research/lsec/fellowships.html), or contact Professors Joseph Ramsey or Wilfried Sieg 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 BJORNDHAHL, Associate Professor of Philosophy – Ph.D., Cornell University; Carnegie Mellon, 2014–
SIMON CULLEN, Assistant Teaching Professor of Philosophy – Ph.D., Princeton University; Carnegie Mellon, 2018–
B. R. GEORGE, Assistant Professor of Philosophy – Ph.D., University of California, Los Angeles; Carnegie Mellon, 2014–
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–
JOSEPH RAMSEY, Special Faculty and Director of Research Computing – Ph.D., University of California, San Diego; Carnegie Mellon, 2006–
RICHARD SCHEINES, Professor of Philosophy, Bess Family Dean’s Chair of the Dietrich College of Humanities and Social Sciences – Ph.D., University of Pittsburgh; Carnegie Mellon, 1987–
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, Department Head – Ph.D., University of Pittsburgh; Carnegie Mellon, 1987–
PATRICK WALSH, Assistant Teaching Professor of Philosophy - Carnegie Mellon-Qatar - Ph.D., Carnegie Mellon University; Carnegie Mellon, 2019 –
DANIELLE WINNER, Associate Professor of Philosophy - Ph.D., Rice University; Carnegie Mellon, 2013–
THOMAS WERNER, Associate Teaching Professor of Philosophy - Ph.D., Rutgers University; Carnegie Mellon, 2003–
WAYNE WU, Associate Professor, Philosophy and the Neuroscience Institute - Ph.D., University of California, Berkeley; Carnegie Mellon, 2010–
FRANCESCA ZAFFORA BLANDO, Assistant Professor of Philosophy – Ph.D., Stanford University; Carnegie Mellon, 2020–
KUN ZHANG, Associate Professor of Philosophy – Ph.D., The Chinese University of Hong Kong; Carnegie Mellon, 2015–
KEVIN ZOLLMAN, Professor of Philosophy – Ph.D., University of California, Irvine; Carnegie Mellon, 2009–

Adjunct Faculty
FRANK PFENNING, Professor, Computer Science Department – Ph.D., Carnegie Mellon University; Carnegie Mellon, 2002–

Special Faculty
CHRISTINA BJORNDHAHL, Teaching Instructor - Ph.D., Cornell University; Carnegie Mellon, 2014–
DERAICK GRAY, Teaching Instructor – Ph.D., Rice University; Carnegie Mellon, 2013–

Emeriti Faculty
ROBERT CAVALIER, Teaching Professor (Emeritus) – Ph.D., Duquesne University; Carnegie Mellon, 1987–
CLARK GLYMOUR, Alumni University Professor of Philosophy (Emeritus) – Ph.D., Indiana University; Carnegie Mellon, 1984–
DANA S. SCOTT, Hillman University Professor of Mathematical Logic, Computer Science and Philosophy (Emeritus) - Ph.D., Princeton University; Carnegie Mellon, 1981–

THE SENIOR HONORS PROGRAM
The Dietrich College Senior Honors Program (https://www.cmu.edu/dietrich/students/undergraduate/programs/senior-honors/) provides recognition of outstanding performance by students majoring in Philosophy, Logic and Computation, Linguistics, 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. In late spring, Dietrich College Senior Honors students are required to fulfill a presentation requirement by participating in the University’s Meeting of the Minds Undergraduate Research Symposium (https://www.cmu.edu/uro/MoM/). This may be done as a poster presentation, or formal presentation, about their thesis projects. By completing the thesis, students earn 18 units of credit and qualify for graduation with College Honors.

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