

# Department of Philosophy

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<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 theory 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 team-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
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Choose one 9-unit course from each category below:

#### Policy History (9 units)

79-300 History of American Public Policy	9
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#### 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 Modern Africa: The Slave Trade to the End of Apartheid	9
79-229 Origins of the Arab-Israeli Conflict, 1880-1948	9
79-230 Arab-Israeli Conflict Since 1948	9
79-237 Comparative Slavery	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
79-264 Tibet and China: History and Propaganda	6
79-265 Russian History: From the First to the Last Tsar	9

79-266	Russian History: From Communism to Capitalism	9
79-307	Religion and Politics in the Middle East	9

**Historical Methods and Approaches (9 units)**

79-200	Introduction to Historical Research & Writing	9
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**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)**

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
80-321	Causation, Law, and Social Policy	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, Development, and Human Rights	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	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 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.

Engineering and Public Policy (some courses have prerequisites; see EPP catalog listing)

19-424	Energy and the Environment	9
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**Business**

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
73-358	Economics of the Environment and Natural Resources	9
73-359	Benefit-Cost Analysis	9
73-365	Firms, Market Structures, and Strategy	9
73-372	International Money and Finance	9

73-408	Law and Economics	9
73-476	American Economic History	9

**English**

76-492	Rhetoric of Public Policy	9
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**History**

Courses from the EHPP 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.

79-217	The War in Vietnam	6
79-221	Development and Democracy in Latin America	9
79-231	American Foreign Policy: 1945-Present	9
79-233	The United States and the Middle East since 1945	9
79-242	African American History: Reconstruction to the Present	9
79-250	Running for President: Campaigns & Elections in History of American Presidency	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
79-298	Mobile Phones & Social Media in Development & Human Rights: A Critical Appraisal	6
79-299	From Newton to the Nuclear Bomb: History of Science, 1750-1950	9
79-301	History of Surveillance: From the Plantation to Edward Snowden	6
79-302	Killer Robots: The Ethics, Law, and Politics of Lethal Autonomous Weapons System	6
79-303	Pittsburgh and the Transformation of Modern Urban America	6
79-305	Moneyball Nation: Data in American Life	9
79-310	Modern U. S. Business History: 1870 to the Present	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
79-335	Drug Use and Drug Policy	9
79-336	Oil & Water: Middle East Perspectives	6
79-338	History of Education in America	9
79-339	Juvenile Delinquency & Film: From Soul of Youth (1920) to West Side Story (1961)	6
79-340	Juvenile Delinquency & Film: From "Juvenile Court" (1973) 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	The Holocaust in Historical Perspective	9
79-370	Disasters in American History (2):Epidemics & Fires	6
79-371	African American Urban History	9
79-374	Greening the Red, White, & Blue: Critical Issues American Environmental History	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.

80-256	Modern Moral Philosophy	9
80-305	Choices, Decisions, and Games	9
80-405	Game Theory	9

**Institute for Politics and Strategy**

84-310	International Political Economy	9
84-380	Grand Strategy in the United States	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
88-387	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	Statistics & Data Science Methods	9
or 36-208	Regression Analysis	
or 70-208	Regression Analysis	
36-303	Sampling, Survey and Society	9
36-309	Experimental Design for Behavioral & 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](mailto:ajlondon@andrew.cmu.edu).

## Ethics, History, and Public Policy Sample Curriculum

Junior Year		Senior Year	
Fall	Spring	Fall	Spring
Core requirement in Economics	Core requirement in History or Philosophy	Capstone Course	EHPP Elective Course
Core requirement in History or Philosophy	Core requirement in History or Philosophy	EHPP Elective Course	Second Course (open)
Core requirement in History or Philosophy	Core requirement in History or Philosophy	EHPP Elective Course	Third Course (open)
Core requirement in History or Philosophy	Core requirement in History or Philosophy	Fourth Course (open)	Fourth Course (open)
Core requirement in History or Philosophy	Fifth Course (open)	Fifth Course (open)	Fifth Course (open)

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
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## 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	

## 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	
76-386	Language & Culture	9
80-283	It Matters How You Say It	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.
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. Students are responsible for identifying their topic and securing their thesis advisor. Students should work with the director of the major to begin the process of identifying their thesis topic and advisor during the fall of their senior year at the latest. Students will be required to submit a written proposal of their thesis project, signed by their thesis faculty advisor, before the end of the second week of classes in which the thesis is being completed.

### Note

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

## The Major in Logic and Computation

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<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 (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. Students should work with the program director during their junior year to begin the process of identifying their topic and potential advisors.

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.

Prerequisites		29 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	
Logic and Computation Core		69-71 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 Electives 36 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
15-317	Constructive Logic	9

### Sample 2.

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

80-280	Linguistic Analysis	9
80-281	Language and Thought	9
80-381	Meaning in Language	9
80-383	Language in Use	9
80-580	Seminar on the Philosophy of Language	9

### Sample 3.

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

80-314	Logic and Artificial Intelligence	9
80-315	Modal Logic	9
80-411	Proof Theory	9
85-412	Cognitive Modeling	9

## Sample 4.

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

80-254	Analytic Philosophy	9
80-312	Mathematical Revolutions	9
80-411	Proof Theory	9
80-413	Category Theory	9

## Sample 5.

A student interested in Methodology might consider the following courses:

80-220	Philosophy of Science	9
80-221	Philosophy of Social Science	9
80-321	Causation, Law, and Social Policy	9
36-309	Experimental Design for Behavioral & Social Sciences	9

**Logic and Computation Degree Requirements (minimum) 360 units**

### 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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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

80-100 Introduction to Philosophy 9

Area 1: Values and Normative Theory 9 units

One of the following:

80-130 Introduction to Ethics 9

80-135 Introduction to Political Philosophy 9

80-136 Social Structure, Public Policy & Ethics 9

80-244 Environmental Ethics 9

80-245 Medical Ethics 9

80-248 Engineering Ethics 9

80-249 AI, Society, and Humanity 9

80-330 Ethical Theory 9

80-335 Social and Political Philosophy 9

80-348 Health, Development, and Human Rights 9

80-430 Ethics and Medical Research 9

80-447 Global Justice 9

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

One of the following:

80-180 Nature of Language 9

80-270 Philosophy of Mind 9

80-271 Philosophy and Psychology 9

80-276 Philosophy of Religion 9

80-280 Linguistic Analysis 9

80-281 Language and Thought 9

80-282 Phonetics and Phonology I 9

80-283 It Matters How You Say It 9

80-284 Invented Languages 9

80-327 Philosophy of Neuroscience 9

80-371 Philosophy of Perception 9

80-380 Philosophy of Language 9

80-381 Meaning in Language 9

80-382 Phonetics and Phonology II 9

80-383 Language in Use 9

80-384 Linguistics of Turkic Languages 9

80-580 Seminar on the Philosophy of Language 9

Area 3: Logic/Philosophy of Mathematics 9 units

One of the following:

80-110 Nature of Mathematical Reasoning 9

80-210 Logic and Proofs 9

80-211 Logic and Mathematical Inquiry 9

80-310 Formal Logic 9

80-311 Undecidability and Incompleteness 9

80-312 Mathematical Revolutions 9

80-315 Modal Logic 9

80-411 Proof Theory 9

80-413 Category Theory 9

80-513 Seminar on Philosophy of Mathematics 9

80-514 Categorical Logic 9

Area 4: Epistemology 9 units

One of the following:

80-150 Nature of Reason 9

80-201 Knowledge and Justified Belief 9

80-208 Critical Thinking 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
80-224	Race, Gender and Science	9
80-226	Revolutions in Science	9
80-305	Choices, Decisions, and Games	9
80-321	Causation, Law, and Social Policy	9
80-322	Philosophy of Physics	9
80-323	Philosophy of Biology	9
80-324	Philosophy of Economics	9
80-327	Philosophy of Neuroscience	9
80-405	Game Theory	9
80-515	Seminar on the Foundations of Statistics	9
80-516	Causality and Learning	Var.
80-520	Seminar on Philosophy Science	9
80-521	Seminar on Formal Epistemology	9

#### Area 5: History of Philosophy 18 units

Two of the following:

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
80-263	Approaching Chinese Philosophy: Basic Texts and Implications	9
80-358	Hume	9
80-362	Russell	9
80-363	19th Century Foundations of Science	9

#### Area 6: Elective 27 units

Three other philosophy courses, or appropriate courses from other departments, with the permission of the Director.

#### 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	9
Area 2		
80-180	Nature of Language	9
Area 3		
80-211	Logic and Mathematical Inquiry	9
Area 4		
80-208	Critical Thinking	9
Area 5		
80-150	Nature of Reason	9
80-250	Ancient Philosophy	9
Area 6		
80-321	Causation, Law, and Social Policy	9
80-348	Health, Development, and Human Rights	9
80-447	Global Justice	9

2. For an emphasis on Philosophy of Science, a student might take:

Area 1		
80-136	Social Structure, Public Policy & Ethics	9
Area 2		
80-371	Philosophy of Perception	9
Area 3		
80-211	Logic and Mathematical Inquiry	9
Area 4		
80-220	Philosophy of Science	9
or 80-221	Philosophy of Social Science	
Area 5		

80-250	Ancient Philosophy	9
80-226	Revolutions in Science	9
Area 6		
80-150	Nature of Reason	9
80-221	Philosophy of Social Science	9
80-322	Philosophy of Physics	9
80-323	Philosophy of Biology	9

3. For an emphasis on Ethics and Social Philosophy, a student might take:

Area 1		
Area 2		
80-276	Philosophy of Religion	9
Area 3		
80-110	Nature of Mathematical Reasoning	9
Area 4		
80-221	Philosophy of Social Science	9
or 80-321	Causation, Law, and Social Policy	
Area 5		
80-250	Ancient Philosophy	9
Area 6		
80-321	Causation, Law, and Social Policy	9

4. For an emphasis on Philosophy of Mind, a student might take:

Area 1		
80-130	Introduction to Ethics	9
Area 2		
80-270	Philosophy of Mind	9
Area 3		
80-211	Logic and Mathematical Inquiry	9
Area 4		
80-201	Knowledge and Justified Belief	9
Area 5		
80-251	Modern Philosophy	9
Area 6		
80-257	Nietzsche	9
80-371	Philosophy of Perception	9
80-521	Seminar on Formal Epistemology	Var.

## 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 (<http://www.cmu.edu/dietrich/philosophy>) for further information.

## Philosophy Department Minors

All majors in the Department allow for minors; in addition, there is a Minor in Ethics and an interdepartmental 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 a "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
80-241	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
80-248	Engineering Ethics	9
80-249	AI, Society, and Humanity	9
80-330	Ethical Theory	9
80-335	Social and Political Philosophy	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	9
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#### Fundamental Skills 18 units

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

Sounds		
80-282	Phonetics and Phonology I	9

Structure		
76-389	Rhetorical Grammar	9
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	

#### 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
or 80-210	Logic and Proofs	
80-310	Formal Logic	9
or 80-311	Undecidability and Incompleteness	

#### 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:		Units
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	Logic and Artificial Intelligence	9
80-315	Modal Logic	9
80-321	Causation, Law, and Social Policy	9
80-322	Philosophy of Physics	9
80-323	Philosophy of Biology	9
80-324	Philosophy of Economics	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 Learning	Var.
80-520	Seminar on Philosophy Science	9
80-521	Seminar on Formal Epistemology	Var.

#### 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
80-263	Approaching Chinese Philosophy: Basic Texts and Implications	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 BJORND AHL, Assistant Professor of Philosophy – Ph.D., Cornell University; Carnegie Mellon, 2014–

SIMON CULLEN, Assistant Teaching Professor of Philosophy – Ph.D., Princeton University ; Carnegie Mellon, 2018–

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–

RICHARD SCHEINES, Professor of Philosophy – 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. SPIRITES, 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 BJORND AHL, 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–