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 three different undergraduate major programs, and jointly sponsors an interdepartmental major: Ethics, History, and Public Policy (with the Department of History):

- 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

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 six minor programs:

- the minor in Ethics
- the minor in Linguistics
- the minor in Logic and Computation
- the minor in Philosophy
- the minor in Rationality, Uncertainty, and Choice: Formal Methods (RUC)
- the minor in Societal & Human Impacts of Future Technologies (SHIFT)

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

The major in Logic and Computation

The major offers a concentration in Logic and Computation with a thesis option. The program, students engage in original research in their senior year, and write a thesis under the direction of an advisor.

Science and Technology Policy

The minor in Science and Technology Policy focuses on the relationship between science and technology with society. Students may also choose to pursue the minor in Logic and Computation.

Ethics

The minor in Ethics offers courses in moral theory, normative ethics, and applied ethics. Students may also choose to pursue the minor in Logic and Computation.

Philosophy

The minor in Philosophy offers courses in classical and contemporary philosophy. Students may also choose to pursue the minor in Science and Technology Policy.

Interdepartmental Minor

The minor in Interdepartmental Minor allows students to pursue a concentration in a related discipline, with a maximum of two additional courses.

Minor in Logic and Computation

The minor in Logic and Computation offers courses in logic, philosophy, and mathematics. Students may also choose to pursue the minor in Ethics.

Minor in Rationality, Uncertainty, and Choice: Formal Methods (RUC)

The minor in Rationality, Uncertainty, and Choice: Formal Methods (RUC) offers courses in decision theory, game theory, and probability. Students may also choose to pursue the minor in Logic and Computation.

Minor in Societal & Human Impacts of Future Technologies (SHIFT)

The minor in Societal & Human Impacts of Future Technologies (SHIFT) offers courses in technology, artificial intelligence, and human rights. Students may also choose to pursue the minor in Logic and Computation.

Curriculum

Students seeking 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 45 units in History, 45 units in Philosophy, 18 units in Law and Social Science, and a 12-unit EHPP Capstone Course. This program may also be taken as an additional (i.e., 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. Foundation Courses in History and Philosophy

Choose one of the following two courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
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<td>9</td>
</tr>
<tr>
<td>79-248</td>
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<td>9</td>
</tr>
<tr>
<td>80-330</td>
<td>Ethical Theory</td>
<td>9</td>
</tr>
</tbody>
</table>

II. Ethics and Policy Core

Choose four of the following courses:

- 80-135 Introduction to Political Philosophy
- 80-136 Social Structure, Public Policy & Ethics
- 80-208 Critical Thinking
- 80-221 Philosophy of Social Science

I. Foundation Courses in History and Philosophy

Choose one of the following two courses:

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II. Ethics and Policy Core

Choose four of the following courses:

- 80-135 Introduction to Political Philosophy
- 80-136 Social Structure, Public Policy & Ethics
- 80-208 Critical Thinking
- 80-221 Philosophy of Social Science

No more than one course may be taken at the 100 level and at least one course must be taken at the 300 level or above.
V. EHPP Capstone Course 12 units

In Fall semester of senior year, EHPP students will participate in an interdisciplinary capstone course that asks students to integrate their studies in Ethics and History by addressing a policy topic of contemporary national urgency (e.g., climate change, immigration, infrastructure, abortion, hate speech, reparations, law enforcement and policing, charter schools, affirmative action, vaccination, taxation, voting rights, global justice). The Departments of History and Philosophy will alternate teaching the EHPP Capstone Course.

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 & Data Science 9
- 36-204 Methods for Statistics & Data Science or 70-208 Regression Analysis 9
- 36-303 Sampling, Survey and Society 9
- 36-309 Experimental Design for Behavioral & Social Sciences 9
- 70-257 Optimization for Business 9
- 80-305 Game Theory 9
- 80-306 Decision Theory 9
- 88-221 Markets, Democracy, and Public Policy 9
- 88-223 Decision Analysis 12
- 88-251 Empirical Research Methods 9
- 88-300 Programming and Data Analysis for Social Scientists 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.

Ethics, History, and Public Policy Sample Curriculum

<table>
<thead>
<tr>
<th>Third-Year</th>
<th>Fourth-Year</th>
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<tbody>
<tr>
<td>Fall</td>
<td>Spring</td>
</tr>
<tr>
<td>Foundations Course in History</td>
<td>Foundations Course in Law and Social Sciences</td>
</tr>
<tr>
<td>Foundations Course in Philosophy</td>
<td>Foundations Course in Law and Social Sciences</td>
</tr>
<tr>
<td>Ethics and Policy Core Course</td>
<td>Ethics and Policy Core Course</td>
</tr>
<tr>
<td>History and Policy Core Course</td>
<td>History and Policy Core Course</td>
</tr>
<tr>
<td>Fifth Course Open</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 they wish. Students should consult their advisor when planning their program.

The Major in Linguistics

Patrick Doyle, Academic Program Manager
Location: Baker Hall 161G
pdoyle2@andrew.cmu.edu
https://go.oncehub.com/PatDoyle (https://go.oncehub.com/PatDoyle)

Linguistics is the scientific study of human language. The central goal of the Linguistics Major 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 Major 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. These courses are supplemented by a wide-ranging set of electives including linguistically relevant courses taught in other departments.

Primary majors complete their course of study with a Senior Thesis, a semester-long research project carried out independently with one-on-one guidance from a member of the linguistics faculty.
Curriculum
The Linguistics primary major requires a total of 12 courses plus a senior thesis. The Linguistics additional major requires a total of 13 courses (senior thesis not required). This includes 2 semesters of sequential language study for all majors. 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.

Linguistics Core (36 units)
Complete the following requirements.
- 80-180 Nature of Language 9
- 80-282 Phonetics and Phonology I 9
- 80-280 Linguistic Analysis 9
- 80-285 Natural Language Syntax 9
- 80-381 Meaning in Language 9
- or 80-383 Language in Use 9

Extended Core (27 units)
Choose three courses (27 units) from Extended Core and/or additional courses from Linguistics Core.
- 80-283 It Matters How You Say It 9
- 80-284 Invented Languages 9
- 80-286 Words and Word Formation: Introduction to Morphology 9
- 80-287 Language Variation and Change 9
- 80-288 Intonation: Transcription and Analysis 9
- 80-382 Phonetics and Phonology II 9
- 80-384 Linguistics of Turkic Languages 9
- 80-385 Linguistics of Germanic Languages 9
- 80-388 Linguistic Typology: Diversity and Universals 9
- 80-488 Acoustics of Human Speech: Theory, Data, and Analysis 9

LANGUAGE REQUIREMENT
Students must successfully complete 2 semesters of foreign language study in a single language (e.g. 100 & 200 level).

Electives
Primary majors choose three additional electives (27 or more units). Additional majors choose four additional electives (36 or more units).

Primary majors: thesis requirement below.

These Electives can be additional courses from the Core or Extended Core courses listed above, the electives list below, or any other course which is approved by the Academic Program Manager 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 Academic Program Manager 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.

Philosophy
- 80-380 Philosophy of Language 9
- 80-484 Language and Thought 9

English
- 76-318 Communicating in the Global Marketplace 9
- 76-325 Intertextuality 9
- 76-385 Introduction to Discourse Analysis 9
- 76-386 Language & Culture 9
- 76-388 Coding for Humanists 9
- 76-389 Rhetorical Grammar 9

Modern Languages
- 82-239 Crazy Linguistically Rich Asian Languages 9
- 82-304 French & Francophone Sociolinguistics 9
- 82-305 French in its Social Contexts 9
- 82-334 Structure of Chinese 9
- 82-585 Topics in Second Language Acquisition 9
- 82-373 Structure of the Japanese Language 9

80-585 ConLaning: Lng. Ling. & Lang Tech via Constru Artif. Lang 12
80-492 Speech Processing 12
80-497 Grammar Formalisms 12

Note: all 11-xxx courses have significant Computer Science prerequisites. Interested students should check with the course instructor and with the Linguistics Academic Program Manager before registering.

Statistics and Data Science
- 36-468 Special Topics: Text Analysis 9

SENIOR THESIS [PRIMARY MAJORS ONLY]
Primary majors must complete a senior thesis (a workload equivalent to a 12-unit course) 80-595 Senior Thesis. 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 Academic Program Manager 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 semester preceding in which the thesis research will be conducted.

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 major or minor. If you are interested in obtaining an additional major in Linguistics, please reach out to the Academic Program Manager, Philosophy Department.

The Major in Logic and Computation
Patrick Doyle, Academic Program Manager
Location: Baker Hall 161G
pdoyle2@andrew.cmu.edu
https://go.oncehub.com/PatDoyle (https://go.oncehub.com/PatDoyle/)
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.

Prerequisites 42 units
80-211 Logic and Mathematical Inquiry 9
36-200 Reasoning with Data 9
15-112 Fundamentals of Programming and Computer Science 12
21-127 Concepts of Mathematics 12

Logic and Computation Core 63 units
80-150 Nature of Reason 9 *Students should complete before their junior year.
80-310 Formal Logic 9 *Students should complete before their junior year.
80-311 Undecidability and Incompleteness 9
15-122 Principles of Imperative Computation 12 *Students should complete this prerequisite before their junior year.
15-150 Principles of Functional Programming 12 *Students should complete this prerequisite before their junior year.
80-595 Senior Thesis 12

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 and above, must be selected in consultation with the Academic Program Manager.

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 9
80-413 Category Theory 9
15-312 Foundations of Programming Languages 12
15-317 Constructive Logic 9

Sample 2.
A student interested in Artificial Intelligence and Cognitive Science might take the following courses:
80-249 AI, Society, and Humanity 9
80-315 Modal Logic 9
80-325 Foundations of Causation and Machine Learning 9
80-411 Proof Theory 9
85-412 Cognitive Modeling 9

Sample 3.
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 4.
A student interested in Methodology might consider the following courses:
80-220 Philosophy of Science 9
80-221 Philosophy of Social Science 9
36-309 Experimental Design for Behavioral & Social Sciences 9
80-305 Game Theory 9

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

The Major in Philosophy
Patrick Doyle, Academic Program Manager
Location: Baker Hall 161G
pdoyle2@andrew.cmu.edu (pdoyle2@andrew.cmu.edu)
https://go.oncehub.com/PatDoyle (https://go.oncehub.com/PatDoyle)

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 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 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.

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
80-234 Race, Gender, and Justice 9
80-244 Environmental Ethics 9
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
     - 80-336 Philosophy of Law 9
     - 80-348 Health, Human Rights, and International Development 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
     - 80-270 Problems of Mind and Body: Meaning and Doing 9
   - Area 3
     - 80-211 Logic and Mathematical Inquiry 9
   - Area 4
     - 80-220 Philosophy of Science 9
     - 80-221 Philosophy of Social Science 9
   - Area 5
     - 80-250 Ancient Philosophy 9
     - 80-226 The Nature of Scientific Revolutions 9
   - Area 6
     - 80-150 Nature of Reason 9
     - 80-221 Philosophy of Social Science 9
     - 80-524 Topics in Formal Epistemology: Topological Philosophy of Science 9

3. For an emphasis on Ethics and Social Philosophy, a student might take:
   - Area 1
     - 80-130 Introduction to Ethics 9
   - Area 2
     - 80-276 Philosophy of Religion 9
and its applications should help students to respond more sensitively to practical problems. This background in ethical theory provides an understanding of how these theories and concepts can be applied to practical problems. The Minor in Ethics introduces students to central ethical concepts and theories.

The Minor in Ethics is designed to be flexible and to allow students to tailor courses to their special interests, while providing some breadth.

- Ethics
- Linguistics
- Logic & Computation
- Philosophy
- Rationality, Uncertainty, and Choice: Formal Methods (RUC)
- Societal & Human Impacts of Future Technologies (SHIFT)

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, followed by additional courses to suit students’ interests and background. For more information, please contact the Academic Program Manager.

| Area 3 | 80-211 Logic and Mathematical Inquiry | 9 |
| Area 4 | 80-221 Philosophy of Social Science | 9 |
| Area 5 | 80-250 Ancient Philosophy | 9 |
| Area 6 | 80-251 Modern Philosophy | 9 |
| 80-330 Ethical Theory | 9 |
| 80-335 Social and Political Philosophy | 9 |
| 80-348 Health, Human Rights, and International Development | 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 Problems of Mind and Body: Meaning and Doing | 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 | 80-202 Kant | 9 |
| 80-521 Seminar on Formal Epistemology: Belief and Evidence | 9 |
| 80-261 Experience, Reason, and Truth | 9 |
| 80-271 Mind and Body: The Objective and the Subjective | 9 |

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 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 a “C” or above, except 80-500 Undergraduate Internship, 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.

- **Area 1**
  - 80-130 Introduction to Ethics
  - 80-135 Introduction to Political Philosophy
  - 80-136 Social Structure, Public Policy & Ethics

- **Area 2**
  - 80-244 Environmental Ethics
  - 80-245 Medical Ethics

- **Area 6**
  - 80-246 Moral Psychology
  - 80-249 AI, Society, and Humanity

- **Area 5**
  - 80-330 Ethical Theory
  - 80-335 Social and Political Philosophy

- **Area 3**
  - 80-336 Philosophy of Law
  - 80-348 Health, Human Rights, and International Development

- **Area 4**
  - 80-447 Global Justice

**Ethics Electives** 18 units

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

- **Area 1**
  - 80-234 Race, Gender, and Justice
  - 80-244 Environmental Ethics

- **Area 2**
  - 80-245 Medical Ethics
  - 80-246 Moral Psychology

- **Area 6**
  - 80-330 Ethical Theory
  - 80-335 Social and Political Philosophy

- **Area 5**
  - 80-336 Philosophy of Law
  - 80-348 Health, Human Rights, and International Development

- **Area 3**
  - 80-447 Global Justice

**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, followed by additional courses to suit students’ interests and background. For more information, please contact the Academic Program Manager.

**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. 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 emphases in Mathematics, Psychology, Physics, and the Social Sciences.

The course of study for the 5 year M.A. in Philosophy is very flexible, as researchers, or informally, as participants in daily linguistic interactions. The foundation of the Linguistics Minor is a set of rigorous core courses, followed by additional courses to suit students’ interests and background. For more information, please contact the Academic Program Manager.

**Philosophy Department Minors**

The Philosophy Department offers six minors, and 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 to the new and unavoidable ethical problems that technologies, businesses, unions, and branches of government must face.
### 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 or **80-210** Logic and Proofs
- **80-310** Formal Logic or **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**

- Complete one course: 9 units
  - **80-210** Logic and Proofs
  - **80-211** Logic and Mathematical Inquiry
  - **80-220** Philosophy of Science
  - **80-221** Philosophy of Social Science
  - **80-226** The Nature of Scientific Revolutions
  - **80-310** Formal Logic
  - **80-311** Undecidability and Incompleteness
  - **80-312** Mathematical Revolutions
  - **80-315** Modal Logic
  - **80-324** Philosophy of Economics
  - **80-325** Foundations of Causation and Machine Learning
  - **80-365** Ramsey
  - **80-411** Proof Theory
  - **80-413** Category Theory
  - **80-514** Categorical Logic
  - **80-516** Causality and Machine Learning
  - **80-521** Seminar on Formal Epistemology: Belief and Evidence

**History of Philosophy Requirements**

- Complete two courses: 18 units
  - **80-150** Nature of Reason
  - **80-226** The Nature of Scientific Revolutions
  - **80-250** Ancient Philosophy

### Philosophy Electives

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.

### Core Requirements

Complete all of the following: 18 units

- **80-305** Game Theory
- **80-306** Decision Theory
- **88-223** Decision Analysis or **88-312** Decision Models and Games

**Note:** Students must complete three elective courses from the following two categories and must complete at least one course in each category.

**Elective Category 1: Formal Foundations**

- **80-201** Knowledge and Justified Belief
- **80-208** Critical Thinking
- **80-210** Logic and Proofs
- **80-315** Modal Logic
- **80-325** Foundations of Causation and Machine Learning
- **80-516** Causality and Machine Learning
- **80-521** Seminar on Formal Epistemology: Belief and Evidence
- **80-524** Topics in Formal Epistemology: Topological Philosophy of Science
- **88-223** Decision Analysis
- **88-312** Decision Models and Games
- **88-379** Data-Driven Decision Analysis

**Elective Category 2: Theory and Applications**

- **80-246** Moral Psychology
- **80-249** AI, Society, and Humanity
- **80-252** Kant
- **80-255** Pragmatism: Making Ideas Work
- **80-261** Experience, Reason, and Truth
- **80-321** Causation, Law, and Social Policy
- **80-324** Philosophy of Economics
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, 10 to 18 units total) Units
80-200 AI, Society, and Humanity 9
80-445 Shift Capstone Experience 1-9

Area Courses (6 courses, 54 units total)
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 and frameworks that provide high-level understanding of computational technologies, including their possibilities and limits.

Complete two courses Units
05-317 Design of Artificial Intelligence Products 12
05-316 Social Web 12
05-320 Service Design 12
15-110 Fundamentals of Programming and Computer Science 12
16-467 Human Robot Interaction 12
17-303 Cryptocurrencies, Blockchains and Applications 9
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
36-202 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 and behavioral sciences (e.g., economics, psychology, sociology), including methods and analyses such as experimental design and quantitative and qualitative data analysis.

Complete two courses Units
05-413 Human Factors 9
17-224 Influence, Persuasion, and Manipulation Online 9
36-200 Reasoning with Data 9
70-312 Negotiation and Conflict Resolution 9
70-341 Team Dynamics and Leadership 9
70-364 Business Law 6
73-102 Principles of Microeconomics 9
73-303 Principles of Macroeconomics 9
79-175 Moneyball Nation: Data in American Life 9
79-234 Technology and Society 9
80-130 Introduction to Ethics 9
80-135 Introduction to Political Philosophy 9
80-330 Ethical Theory 9
80-335 Social and Political Philosophy 9
84-266 Research Design for Political Science 9
84-267 Data Science for Political Science 9
84-275 Comparative Politics 9
84-319 Civil-Military Relations 9
84-325 Contemporary American Foreign Policy 9
84-369 Decision Science for International Relations 9
84-370 Nuclear Security & Arms Control 9
84-372 Space and National Security 9
84-373 Emerging Technologies and International Law 9
84-380 US Grand Strategy 9
84-386 The Privatization of Force 9
84-387 Remote Systems and the Cyber Domain in Conflict 9
84-389 Terrorism and Insurgency 9
84-390 Social Media, Technology, and Conflict 9
84-405 The Future of Warfare 9
88-221 Markets, Democracy, and Public Policy 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.

Complete two courses Units
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 6
73-102 Principles of Microeconomics 9
73-303 Principles of Macroeconomics 9
79-175 Moneyball Nation: Data in American Life 9
79-234 Technology and Society 9
80-130 Introduction to Ethics 9
80-135 Introduction to Political Philosophy 9
80-330 Ethical Theory 9
80-335 Social and Political Philosophy 9
84-266 Research Design for Political Science 9
84-267 Data Science for Political Science 9
84-275 Comparative Politics 9
84-319 Civil-Military Relations 9
84-325 Contemporary American Foreign Policy 9
84-369 Decision Science for International Relations 9
84-370 Nuclear Security & Arms Control 9
84-372 Space and National Security 9
84-373 Emerging Technologies and International Law 9
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84-386 The Privatization of Force 9
84-387 Remote Systems and the Cyber Domain in Conflict 9
84-389 Terrorism and Insurgency 9
84-390 Social Media, Technology, and Conflict 9
84-405 The Future of Warfare 9
88-221 Markets, Democracy, and Public Policy 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

Faculty

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