Dietrich College Interdisciplinary Majors

When addressing complex issues, we often rely on approaches that take advantage of a variety of relevant disciplines. The college houses the special category of “interdepartmental majors” for programs where this interdisciplinary approach is most pronounced and in which the varied disciplinary perspectives are most fully integrated. These majors are presented here separately, rather than as departmentally-based options, to reflect and underscore their sponsorship by more than one academic department and the unique features that follow from this structure.

Interdepartmental majors are administered by the academic department of the major’s faculty advisor.

The Major in Economics and Mathematical Sciences

Faculty Advisor: Carol Goldburg
Office: GSIA 133
Email: cg28@andrew.cmu.edu

The B.S. in Economics and Mathematical Sciences (http://coursecatalog.web.cmu.edu/dietrichcollegeofhumanitiesandsocialsciences/undergraduateeconomicsprogram/#bsineconomicsandmathematicalsciencescurriculum) is a collaborative effort between the Department of Mathematical Sciences and the Undergraduate Economics Program. Combining advanced mathematics with advanced economic theory is the hallmark of this curriculum. The curriculum provides students with courses that complement and develop depth of understanding of economic theory, applied economics, and applied mathematics. This major offers an integrated curriculum, guiding students through a program of coursework that exploits and builds upon the synergies between mathematics and economics. This degree program equips students with the mathematical tools that are essential for success in Ph.D. programs in economics, mathematics, and key functional areas of business including finance, accounting, marketing, and information systems. Students pursuing this degree will be well prepared for the beginning of their research careers in academia, government, and industry. There are a limited number of student slots in this program; interested students may apply as early as their sophomore year.

The Major in Economics and Statistics

Academic Advisor: Rebecca Nugent
For questions about Economics courses contact: Carol Goldburg or Kathleen Conway
For questions about Statistics courses contact: Rebecca Nugent or Paige Houser
Office: Baker Hall 132A
Email: acadcoord@stat.cmu.edu

The Major in Economics and Statistics provides an interdisciplinary course of study aimed at students with a strong interest in the empirical analysis of economic data. With joint curriculum from the Department of Statistics and the Undergraduate Economics Program, the major provides students with a solid foundation in the theories and methods of both fields. Students in this major are trained to advance the understanding of economic issues through the analysis, synthesis and reporting of data using the advanced empirical research methods of statistics and econometrics. Graduates are well positioned for admission to competitive graduate programs, including those in statistics, economics and management, as well as for employment in positions requiring strong analytic and conceptual skills - especially those in economics, finance, education, and public policy.

The requirements for the B.S. in Economics and Statistics are the following:

I. PREREQUISITES 38-39 UNITS

1. Mathematical Foundations 38-39 units
   Calculus
   21-120 Differential and Integral Calculus 10
   and one of the following three:
   21-122 Integration and Approximation 10
   21-127 Concepts of Mathematics 10
   21-257 Models and Methods for Optimization 9
   and one of the following:

21-256 Multivariate Analysis 9
21-259 Calculus in Three Dimensions 9

Note: Passing the MSC 21-120 assessment test is an acceptable alternative to completing 21-120.
Note: Taking both 21-111 and 21-112 is equivalent to 21-120. The Mathematical Foundations total is then 48-49 units. The Economics and Statistics major would then total 201-202 units.

Linear Algebra

One of the following three courses:
21-240 Matrix Algebra with Applications 10
21-241 Matrices and Linear Transformations 10
21-242 Matrix Theory 10

Note: 21-241 and 21-242 are intended only for students with a very strong mathematical background.

2. Economics Foundations 9 units
73-100 Principles of Economics 9

3. Statistical Foundations 18 units
36-201 Statistical Reasoning and Practice 9
and one of the following:
36-202 Statistical Methods 9
36-208 Regression Analysis 9
36-309 Experimental Design for Behavioral and Social Sciences 9
Or extra statistical elective**

*Acceptable equivalents for 36-201 are 36-207 (70-207), 36-220 and 36-247.
**Students who enter the program with 36-225/36-226 should discuss with their advisors.

II. DISCIPLINARY CORE 126 UNITS

1. Economics Core 36 units
73-230 Intermediate Microeconomics * 9
73-240 Intermediate Macroeconomics 9
73-270 Writing for Economists 9
73-363 Econometrics 9

*Starting Fall 2015 21-256 or 21-259 will be a prerequisite for 73-230.

2. Statistics Core 36 units
36-225 Introduction to Probability Theory ** 9
and one of the following two courses:
36-226 Introduction to Statistical Inference * 9
36-326 Mathematical Statistics (Honors) * 9
and both of the following two courses:
36-401 Modern Regression * 9
36-402 Advanced Methods for Data Analysis 9

*In order to be a major in good standing, a grade of C or better is required in 36-225 (or equivalents), 36-226 or 36-326 and 36-401. Otherwise you will not be allowed to continue in the major.
**It is possible to substitute 36-217 or 21-325 for 36-225. (36-225 is the standard introduction to probability, 36-217 is tailored for engineers and computer scientists, and 21-325 is a rigorous Probability Theory course offered by the Department of Mathematics.)

3. Computing 9 units
36-350 Statistical Computing * 9
A complex set of requirements and prerequisites. Students are advised to begin planning their curriculum (with appropriate advisors) as soon as possible. This is particularly true if the other major has related programs (or related majors) as soon as possible. Students should consider 36-326 Mathematical Statistics (Honors) as an alternative to 36-226. Although 21-240 Matrix Algebra with Applications is recommended for Statistics majors, students considering PhD programs may wish to take 21-241 Matrices and Linear Transformations or 21-242 Matrix Theory instead. Additional courses should include both 21-127 Concepts of Mathematics and 21-355 Principles of Real Analysis I.

Prospective PhD students should also consider additional courses among 21-228 Discrete Mathematics, 21-260 Differential Equations, 21-341 Linear Algebra, and 21-356 Principles of Real Analysis II.

**Recommendations for Prospective PhD Students**

Students interested in pursuing a PhD in Statistics or Biostatistics are encouraged to complete an undergraduate degree. Students are advised to begin planning their curriculum (with appropriate advisors) as soon as possible. This is particularly true if the other major has related programs (or related majors) as soon as possible. Students should consider 36-326 Mathematical Statistics (Honors) as an alternative to 36-226. Although 21-240 Matrix Algebra with Applications is recommended for Statistics majors, students considering PhD programs may wish to take 21-241 Matrices and Linear Transformations or 21-242 Matrix Theory instead. Additional courses should include both 21-127 Concepts of Mathematics and 21-355 Principles of Real Analysis I.

**Sample Program**

The following sample program illustrates one way to satisfy the requirements of the Economics and Statistics Major. Keep in mind that the program is flexible and can support other possible schedules (see footnotes below the schedule).

### Freshman

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-120 Differential and Integral Calculus</td>
<td>21-259 Calculus in Three Dimensions</td>
</tr>
<tr>
<td>36-201 Statistical Reasoning and Practice</td>
<td>36-202 Statistical Methods</td>
</tr>
<tr>
<td>73-100 Principles of Economics</td>
<td>73-230 Intermediate Microeconomics</td>
</tr>
</tbody>
</table>

*Note that some courses carry prerequisites and/or reserve seats for primary majors.*

### Sophomore

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-122 Integration and Approximation</td>
<td>21-240 Matrix Algebra with Applications</td>
</tr>
<tr>
<td>36-225 Introduction to Probability Theory</td>
<td>36-226 Introduction to Statistical Inference</td>
</tr>
<tr>
<td>73-230 Intermediate Microeconomics</td>
<td>73-240 Intermediate Macroeconomics</td>
</tr>
</tbody>
</table>

**Prerequisites 55-57 units**

### Complete ALL of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-111 Calculus I (or equivalent)</td>
<td>10</td>
</tr>
<tr>
<td>36-201 Statistical Reasoning and Practice</td>
<td>9</td>
</tr>
<tr>
<td>36-202 Statistical Methods</td>
<td>9</td>
</tr>
</tbody>
</table>

### Complete THREE of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>03-123 Modern Biology</td>
<td>9</td>
</tr>
<tr>
<td>03-124 Modern Biology Laboratory (03-123 is corequisite)</td>
<td>9</td>
</tr>
<tr>
<td>03-125 Evolution</td>
<td>9</td>
</tr>
<tr>
<td>09-103 Atoms, Molecules and Chemical Change</td>
<td>9</td>
</tr>
<tr>
<td>09-105 Introduction to Modern Chemistry I</td>
<td>10</td>
</tr>
<tr>
<td>09-106 Modern Chemistry II</td>
<td>10</td>
</tr>
</tbody>
</table>

### Disciplinary Perspectives: Complete TWO of the following courses (18 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>09-510 Introduction to Green Chemistry</td>
<td>9</td>
</tr>
<tr>
<td>73-148 Environmental Economics</td>
<td>9</td>
</tr>
<tr>
<td>76-319 Environmental Rhetoric</td>
<td>9</td>
</tr>
<tr>
<td>79-374 American Environmental History: Critical Issues</td>
<td>9</td>
</tr>
</tbody>
</table>

### Thematic Electives: Complete TWO of the following courses (18 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-100 Introduction to Civil and Environmental Engineering</td>
<td>12</td>
</tr>
<tr>
<td>19-101 Introduction to Engineering and Public Policy</td>
<td>12</td>
</tr>
<tr>
<td>19-424 Energy and the Environment</td>
<td>9</td>
</tr>
</tbody>
</table>
I. Economics Requirement

Students graduating with a primary major in Ethics, History, and Public Policy must include 123 units encompassing 9 units in Economics, 39 units in History, and 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.

II. History Requirement

Choose one of the following:

- 70-260 Principles of Economics 9
- 88-220 Policy Analysis I 9

III. Philosophy Requirement

Choose one of the following:

- 19-447 Political Philosophy 9
- 19-448 Environment, Ethics, and Public Policy 9
- 19-451 Research and Analytical Methods 9
- 19-452 Political Theory and Public Policy 9

IV. Senior Capstone Project Course (79-80-449)

The Ethics, History and Public Policy Project Course is required for the senior capstone course. This 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 123 units encompassing 9 units in Economics, 39 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.

IV. Economics Requirement

Choose one of the following:

- 73-100 Principles of Economics 9
- 88-220 Policy Analysis I 9

IV. History Core

Choose one 9-unit course from each category below:

- 70-260 Principles of Economics 9
- 88-220 Policy Analysis I 9

V. Elective Courses

Choose any three courses from any category or categories shown below:

Policy History (9 units)
- 79-300 History of American Public Policy 9
- 79-240 The Development of American Culture 9
- 79-249 20th Century U.S. History 9

Non-U.S. History (9 units)
- 79-205 20th Century Europe 9
- 79-207 Development of European Culture 9
- 79-220 Caribbean: Cultures and Histories 9
- 79-222 Between Revolutions: The Development of Modern Latin America 9
- 79-226 Introduction to African History: Earliest Times to 1780 9
- 79-227 Introduction to African History: 1780-1994 9
- 79-261 Chinese Culture and Society 9
- 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 (12 units)
- 79-200 Introduction to Historical Research 12

36 units of Philosophy Core

Choose one 9-unit course from each category below. No more than 18 units at the 100 level may be counted toward this requirement.

Ethics (9 units)
- 80-130 Introduction to Ethics 9
- 80-230 Ethical Theory 9

Political Philosophy (9 units)
- 80-135 Introduction to Political Philosophy 9
- 80-235 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
- 80-337 Philosophy, Politics & Economics 9

Applied Philosophy (9 units)
- 80-136 Social Structure, Public Policy & Ethics 9
- 80-244 Environmental Ethics 9
- 80-245 Medical Ethics 9
- 80-247 Ethics and Global Economics 9
- 80-335 Deliberative Democracy: Theory and Practice 9
- 80-348 Health Development and Human Rights 9
- 80-447 Global Justice 9

12 units of Senior Capstone Project Course (79/80-449)

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 and social-scientific education. It also serves as an excellent springboard for graduate study in a wide variety of disciplines. 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.

27 units of Elective Courses

Choose any three courses from any category or categories shown below.

Engineering and Public Policy (some courses have prerequisites; see EPP catalog listing)
- 19-424 Energy and the Environment 9
- 19-426 Environmental Decision Making 9
- 19-448 Science, Technology & Ethics 9

Business
- 70-311 Organizational Behavior 9
- 70-321 Negotiation and Conflict Resolution 9

The Major in Ethics, History, and Public Policy

Director: Professor Jay Aronson, aronson@andrew.cmu.edu, Baker Hall 246B, 412-268-2887

http://www.cmu.edu/hss/ehpp/

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 in law, public policy, ethics, and advocacy 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. 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.
Counts in the history or philosophy core may be taken as electives only if they are not being used to fulfill the core requirement. Double counting is not permitted.

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.

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.

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 Jay Aronson, aronson@andrew.cmu.edu.

Ethics, History, and Public Policy Sample Curriculum

<table>
<thead>
<tr>
<th>Year</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Development and Democracy in Latin America</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>American Foreign Policy: 1945-Present</td>
<td>9</td>
</tr>
<tr>
<td>Spring</td>
<td>The United States and the Middle East since 1945</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>African American History: Reconstruction to the Present</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>The Soviet Union in World War II: Military, Political, and Social History</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Bananas, Baseball, and Borders: Latin America and the United States</td>
<td>9</td>
</tr>
<tr>
<td>Spring</td>
<td>Pittsburgh and the Transformation of Modern Urban America</td>
<td>6</td>
</tr>
<tr>
<td>Fall</td>
<td>Women, Politics, and Protest</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Body Politics: Women and Health in America</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Biology and Society: Evolution, Animal Experimentation, and Eugenics</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Law, Ethics, and the Life Sciences</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Drug Use and Drug Policy</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Juvenile Delinquency and Film (1920-1950)</td>
<td>6</td>
</tr>
<tr>
<td>Fall</td>
<td>Juvenile Delinquency and Film: From &quot;Blackboard Jungle&quot; to &quot;The Wire&quot;</td>
<td>6</td>
</tr>
<tr>
<td>Fall</td>
<td>Introduction to Science and Technology Studies</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Poverty, Charity, and Welfare</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Terrorism and U.S. National Security</td>
<td>6</td>
</tr>
<tr>
<td>Fall</td>
<td>African American Urban History</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>American Environmental History: Critical Issues</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Petrocultures: How Oil Changed the World</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Epidemic, Disease, and Public Health</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Stalin and Stalinism</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Modern Moral Philosophy</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Rational Choice</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Game Theory</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Decision Processes in American Political Institutions</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Decision Analysis and Decision Support Systems</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Topics in Law: 1st Amendment</td>
<td>9</td>
</tr>
<tr>
<td>Fall</td>
<td>Economics of Technological Change</td>
<td>9</td>
</tr>
<tr>
<td>Spring</td>
<td>Perspectives on Industrial Research and Development</td>
<td>9</td>
</tr>
<tr>
<td>Spring</td>
<td>Complex Technological Systems: Past, Present, and Future</td>
<td>9</td>
</tr>
<tr>
<td>Spring</td>
<td>Entrepreneurship, Regulation and Technological Change</td>
<td>9</td>
</tr>
<tr>
<td>Spring</td>
<td>Social Norms and Economics</td>
<td>9</td>
</tr>
<tr>
<td>Spring</td>
<td>Institutions, Entrepreneurship, and Innovation</td>
<td>9</td>
</tr>
<tr>
<td>Spring</td>
<td>Public Policy and Regulation</td>
<td>9</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Models and Methods for Optimization</td>
<td>9</td>
</tr>
<tr>
<td>Statistical Methods</td>
<td>9</td>
</tr>
<tr>
<td>Regression Analysis</td>
<td>9</td>
</tr>
<tr>
<td>Probability and Statistics for Business Applications</td>
<td>9</td>
</tr>
<tr>
<td>Sampling, Survey and Society</td>
<td>9</td>
</tr>
<tr>
<td>Experimental Design for Behavioral and Social Sciences</td>
<td>9</td>
</tr>
<tr>
<td>Rational Choice</td>
<td>9</td>
</tr>
<tr>
<td>Empirical Research Methods</td>
<td>9</td>
</tr>
</tbody>
</table>

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

**The Major in Information Systems**

Faculty Program Director: Randy S. Weinberg
Office: Porter Hall 224C, rweinberg@cmu.edu
Program Advisor: Carol Young
Office: Porter Hall 222F, caroly@cmu.edu
Faculty: C.F. Larry Heimann, Jeria Quesenberry, Raja Sooriamrthi

Information Systems (IS) is a unique and innovative undergraduate interdisciplinary program, drawing on a wide range of exciting college and university strengths. IS is an internationally recognized undergraduate major for students who want to design and implement effective solutions to meet organizational and management needs for information and decision support. IS majors learn how elements of organizations, technology, economics, social aspects and human interaction work together to create effective computer-based information systems to affect real outcomes.

Graduates of the Program are ideally situated to take a leading role in managing and shaping our information-based future.

For full program information, go to The Major in Information Systems (http://coursescatalog.web.cmu.edu/dietrichcollegeofhumanitiesandsocialsciences/informationssystems).

**The Major in Linguistics**

Tom Werner, Director
Office: Baker Hall 155F
Email: twerner@andrew.cmu.edu
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 grade of "C" or above. For Dietrich College students, up to 2 of these courses may be counted also as satisfying the college’s general education requirements (as long as the double-counting maximum established by the college is not exceeded), with permission of the major director. Students from other colleges may fulfill their Humanities requirements using courses taken towards the Linguistics Major. However, no courses may be counted simultaneously towards the Linguistics Major and any other major.

Introductory course

80-180 Nature of Language 9

Fundamental Skills

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

Sounds
80-282 Phonetics and Phonology I 9

Structure
80-280 Linguistic Analysis 9
76-339 Rhetorical Grammar 9
80-389 Natural Language Syntax 9

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

Breadth

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

Area 1: Language Learning and Language Cognition
76-420 Process of Reading and Writing 9
82-280 Learning About Language Learning 9
82-383 Second Language Acquisition: Theories and Research 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
76-318 Communicating in the Global Marketplace 9
76-385 Introduction to Discourse Analysis 9
76-386 Language & Culture 9
82-273 Introduction to Japanese Language and Culture 9
82-305 French in its Social Contexts 9
82-311 Arabic Language and Culture I 9
82-312 Arabic Language and Culture II 9
82-333 Introduction to Chinese Language and Culture 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.

76-373 Topics in Rhetoric: Argument 9
76-378 Literacy: Educational Theory and Community Practice 9
76-451 Topics in Language Study 9
76-476 Rhetoric of Science 9
80-281 Language and Thought 9
80-283 Syntax and Discourse 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
82-345 Introduction to Hispanic Literary and Cultural Studies 9
82-373 Structure of the Japanese Language 9
82-378 Japanese Conversation Analysis 9
82-388 Understanding Second Language Fluency 9
82-442 Analysis of Spoken Spanish 9
82-444 The Structure of Spanish 9
82-476 Japanese Discourse Analysis 9
82-480 Social and Cognitive Aspects of Bilingualism 9
82-488 Language Learning in a Study Abroad Context 9
11-411 Natural Language 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
15-492 Special Topic: Speech Processing 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.

Notes

Course numbers 82-305, 82-311, 32-312, 82-373, 82-378, 82-442, 82-444, 82-476 are taught in the language of analysis.

Course number 82-345 topics vary; consult with Director.

All 11-xxx and 15-xxx courses have significant Computer Science prerequisites. Interested students should check with the course instructor before registering.

Carnegie Mellon University
The Major in Psychology and Biological Sciences

This unified major is intended to reflect the interdisciplinary nature of our current research in the fields of psychology and biology, as well as the national trend in some professions to seek individuals broadly trained in both the social and natural sciences. Students entering from the Dietrich College of Humanities and Social Sciences will earn a Bachelor of Science in Psychology and Biological Sciences. Students entering from the Mellon College of Sciences receive a Bachelor of Science in Biological Sciences and Psychology. Students entering from the Science and Humanities Scholars (SHS) program can complete the SHS educational core and choose either departmental order for their diploma.

Pre-Major Requirements

The unified major specifies particular pre-major requirements in the areas of mathematical sciences and statistics, natural science, and computational reasoning. Particular courses are specified in these areas because they are prerequisites for courses required in the major and therefore they are the most efficient way to complete the general education requirements for either Dietrich College or SHS. All other general education categories can be filled in any way that satisfies the requirements of the student’s college or of the SHS program.

The major in Psychology and Biological Sciences is offered only as a B.S. degree. Full curriculum requirements can be viewed here (http://coursecatalog.web.cmu.edu/dietrichcollegeofhumanitiesandsocialsciences/departmentofpsychology/#unifieddoublemajorinpsychologyandbiologicalsciences).

Student-Defined Major Program

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http://www.hss.cmu.edu/studentdefinedmajor.html

For Dietrich College students whose educational goals cannot be as adequately served by the curricula of existing majors, the college offers the opportunity to self-define a major. The procedure for establishing such a major centers on a written proposal, submitted to the Dietrich College Dean’s Office. This proposal consists of two parts:

Major description and rationale. A description of the components of the proposed program of study; a presentation of the objectives of the program of study, how it represents a coherent and (given available faculty, courses, and other resources) viable course of study, and the reason(s) why these objectives cannot be accomplished within one or more of the college's existing majors.

The curriculum. Presentation of a complete outline of all courses that will comprise the requirements for the major. These courses should be categorized in two ways: first, according to that component of the major program to which each belongs (e.g., mathematical prerequisites; research methods; theoretical perspectives; etc.); and second, a semester-by-semester outline that indicates when each course is to be taken (or, for any already taken, when taken and grade received). In addition to courses taken at Carnegie Mellon, the major's curriculum may include courses taken (or to be taken) at other schools, related projects or internships, or programs of study abroad. The minimum requirements for graduation is, as with all majors in the college, 360 units of credit and completion of the Dietrich College general education program.

Proposals and curricula are evaluated for clarity of focus, coherence and depth in related areas, and viability. Proposals should generally be developed no later than the sophomore year, and approved majors begin their program generally no later than the junior year.

The student-defined option is also possible to propose as an additional major or minor. These options extend to undergraduates from all Carnegie Mellon colleges.