

Department of Social and Decision Sciences

Department Office: Porter Hall 208
<http://www.cmu.edu/dietrich/sds/>

The Department of Social and Decision Sciences is a multidisciplinary department that offers undergraduate programs that seamlessly combine frontier knowledge in the social sciences with the practical skills needed to excel in key decision making roles in the public, private, and non-profit sectors and in advanced graduate studies. Our students learn how to combine intellectual ideals with the realities of human and organizational behavior and to apply these lessons across a wide variety of endeavors, ranging from government service to leadership positions in the information economy.

The department offers undergraduate majors in Decision Science and in Policy and Management. The core courses leverage our strength in decision analysis, empirical research, organizations, and policy analysis. In addition to completing this core, students also specialize in their major area through a set of required and elective courses.

Our faculty is committed to the academic success and growth of our students and many of our undergraduates work with faculty on research projects and internships. The directors of the majors are easily accessible and encourage students to talk with them about their curriculum, progress, and available opportunities.

The Department of Social and Decision Sciences has a long history of creating innovative and prescient undergraduate programs that combine key ideas from across the social sciences into cohesive majors that allow our graduates to excel in their chosen professions or in the pursuit of advanced studies. Our emphasis on the theory and practice of individual and social decision making linked with our high-quality, multidisciplinary social science faculty, provides a solid foundation from which graduates can embrace a variety of future paths.

The Major in Decision Science

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The interdisciplinary field of Decision Science seeks to understand and improve the judgment and decision making of individuals, groups, and organizations. Qualified graduates can continue to PhD programs in Decision Science or related fields (e.g., psychology, business), pursue professional degrees (e.g., MBA, MD, JD, MPH), or take professional positions in business, government, consulting, or the non-profit sector. Students work with faculty and the Academic Advisor to tailor their education to their personal needs and interest.

Carnegie Mellon is one of the leading centers for the study of Decision Science - and offers the only undergraduate major that integrates analytical and behavioral approaches to decision making. Our faculty are involved in applying Decision Science in a wide variety of areas, allowing them to share practical experiences with students. These applications include medical decision making (e.g., conveying the costs and benefits of treatment options), legal decision making (e.g., reducing the effects of hindsight bias on attributions of responsibility for accidents), risk management (e.g., assessing and communicating the risks of climate change), marketing (e.g., understanding the effects of inter-temporal choice on purchasing decisions), and business (e.g., identifying unrecognized conflicts of interest).

Decision Science is grounded in theories and methods drawn from psychology, economics, philosophy, statistics, and management science. Courses in the major cover the three aspects of decision science: (a) normative analysis, creating formal models of choice; (b) descriptive research, studying how cognitive, emotional, social, and institutional factors affect judgment and choice, and (c) prescriptive interventions, seeking to improve judgment and decision making. In addition to gaining a broad education in the principles of judgment and decision making, Decision Science majors gain broadly applicable skills in research design and analysis. They also have the chance to think about and discuss decision making in many different areas.

The core courses present fundamental theories and results from the study of decision making, along with their application to real-world problems. They introduce students to methods for collecting and analyzing behavioral data. For example, students learn to conduct surveys (e.g., uncovering consumer or managerial preferences), design experiments (e.g., evaluating theories,

comparing ways of presenting information), and evaluate the effectiveness of interventions.

The elective courses provide students with additional knowledge in areas of decision making that meet their personal, intellectual, and career goals. These courses are organized into six clusters: biological and behavioral aspects of decision making, managerial and organizational aspects, philosophical and ethical perspectives, economic and statistical methods, public policy, and research methods. Students can concentrate in one area or spread their studies across them. In addition to coursework, the department offers research opportunities for interested and qualified students. Participating in research helps students to extend their mastery of decision science, discover whether a research career is right for them, and get to know faculty and graduate students better.

Prerequisites

All Decision Science majors must complete mathematics, statistics, and analytic methods prerequisites (see below), by the end of the sophomore year.

| | |
|--|-------|
| Mathematics Prerequisite | Units |
| 21-111-21-112 Calculus I-II | 10-20 |
| or 21-120 Differential and Integral Calculus | |

Students who successfully pass the proctored Calculus Assessment on campus or who receive credit through accepted standardized exams (such as AP, IB, or Cambridge) at the 21-120 or 21-122 levels will be required to take a more advanced 21-xxx course for this prerequisite. 21-122, 21-240, or 21-256 are suggested.

| | |
|---|-------|
| Statistics Prerequisite | Units |
| 36-201 Statistical Reasoning and Practice | 9 |

Students must take one course from the following set (or an approved alternative). Students may not count a course used to fulfill the Mathematics Prerequisite as also filling the Analytic Methods Prerequisite.

| | |
|--|-------|
| Analytic Methods Prerequisite | Units |
| 21-122 Integration and Approximation | 10 |
| 21-256 Multivariate Analysis | 9 |
| 21-257 Models and Methods for Optimization | 9 |
| 36-309 Experimental Design for Behavioral and Social Sciences | 9 |
| 36-401 Modern Regression | 9 |
| 36-410 Introduction to Probability Modeling | 9 |
| 80-211 Logic and Mathematical Inquiry | 9 |
| 80-212 Arguments and Logical Analysis | 9 |
| 88-252 Causal Inference in the Field: Using Data to Study Crime, Love, Sports & More | 9 |

Curriculum

The core curriculum in Decision Science consists of two courses in empirical research methods and five courses providing the theoretical perspectives of Decision Science.

| | |
|---|-------|
| Theoretical Perspectives | Units |
| 88-120 Reason, Passion and Cognition ** | 9 |
| 85-211 Cognitive Psychology | 9 |
| 88-220 Policy Analysis I | 9 |
| 88-223 Decision Analysis | 9 |
| 88-302 Behavioral Decision Making | 9 |
| | 45 |

** 88-120 should be taken in the freshman or sophomore year.

| | |
|-----------------------------------|-------|
| Research Methods | Units |
| 36-202 Statistical Methods | 9 |
| 88-251 Empirical Research Methods | 9 |
| | 18 |

Electives 45 units

Complete at least 45 units of courses from the following categories. The selected courses may be from one category or from any combination. Note that not all elective courses are offered every year.

At least three of these courses (27 units) must be Department of Social and Decision Sciences courses (88-xxx).

| | | |
|---|---|--------------|
| 1. Biological and Behavioral Aspects of Decision Making | | Units |
| 85-352 | Evolutionary Psychology | 9 |
| 85-377 | Attitudes and Persuasion | 9 |
| 85-442 | Health Psychology | 9 |
| 88-342 | The Neuroscience of Decision Making | 9 |
| 88-355 | Social Brains: Neural Bases of Social Perception and Cognition | 9 |
| 88-360 | Behavioral Economics | 9 |
| 88-365 | Behavioral Economics and Public Policy | 9 |
| 2. Managerial and Organization Aspects of Decision Making | | |
| 70-311 | Organizational Behavior* | 9 |
| 70-381 | Marketing I | 9 |
| 70-460 | Mathematical Models for Consulting | 9 |
| 88-221 | Policy Analysis II | 9 |
| 88-260 | Organizations* | 9 |
| 88-406 | Behavioral Economics in Organizations | 9 |
| 88-418 | Negotiation - Domestic Focus | 9 |
| 88-419 | Negotiation - International Focus | 9 |
| 88-444 | Public Policy and Regulation | 9 |
| 88-451 | Policy Analysis Senior Project | 12 |
| or 88-452 | Policy Analysis Senior Project | |
| 3. Philosophical and Ethical Perspectives on Decision Making | | Units |
| 80-208 | Critical Thinking | 9 |
| 80-221 | Philosophy of Social Science | 9 |
| 80-245 | Medical Ethics | 9 |
| 80-305 | Choices, Decisions, and Games | 9 |
| 80-321 | Causation, Law, and Social Policy | 9 |
| 88-409 | Behavioral Economics Perspectives on Ethical Issues | 9 |
| 4. Economic and Statistical Methods for Decision Science | | Units |
| 70-460 | Mathematical Models for Consulting | 9 |
| 73-347 | Game Theory for Economists | 9 |
| 80-337 | Philosophy, Politics & Economics | 9 |
| 80-405 | Game Theory* | 9 |
| 88-255 | Behavioral and Applied Game Theory | 9 |
| 88-360 | Behavioral Economics | 9 |
| 88-367 | Behavioral Economics in the Wild | 9 |
| * 80-405 and 88-316 are different courses and are not cross-listed. | | |
| 5. Decision Science and Public Policy | | |
| 84-393 | Legislative Decision Making: US Congress | 9 |
| 88-221 | Policy Analysis II | 9 |
| 88-365 | Behavioral Economics and Public Policy | 9 |
| 88-366 | Behavioral Economics in Development | 9 |
| 88-405 | Risk Perception and Communication | 9 |
| 88-412 | Energy, Climate Change, and Economic Growth in the 21st Century | 9 |
| 88-444 | Public Policy and Regulation | 9 |
| 88-451 | Policy Analysis Senior Project | 12 |
| or 88-452 | Policy Analysis Senior Project | |
| 6. Research Methods for Decision Science | | Units |
| 36-303 | Sampling, Survey and Society | 9 |
| 70-460 | Mathematical Models for Consulting | 9 |
| 88-252 | Causal Inference in the Field: Using Data to Study Crime, Love, Sports & More | 9 |
| 88-319 | Large-scale social phenomenon | 9 |
| 88-402 | Modeling Complex Social Systems | 9 |

88-435 Decision Science and Policy 9

Note: Some courses have additional prerequisites.

Decision Science, B.S. Sample Curriculum

| Freshman | | Sophomore | |
|---|---|---|---|
| Fall | Spring | Fall | Spring |
| 88-120 Reason, Passion and Cognition | 36-202 Statistical Methods | 88-220 Policy Analysis I | 85-211 Cognitive Psychology (or 88-302) |
| 36-201 Statistical Reasoning and Practice | Pick Two (Freshman Seminar, 76-101, 79-104) | 88-251 Empirical Research Methods | 88-252 Causal Inference in the Field: Using Data to Study Crime, Love, Sports & More (or other Analytic Methods course) |
| 21-120 Differential and Integral Calculus (or 21-111, depending on placement) | Gen Ed or Elective | 88-302 Behavioral Decision Making (or 85-211) | Decision Science elective |
| Pick One (Freshman Seminar, 76-101, 79-104) | Gen Ed or Elective | Gen Ed or Elective | Elective or Decision Science elective |
| Gen Ed or Elective | | Gen Ed or Elective | Gen Ed or Elective |
| Junior | | Senior | |
| Fall | Spring | Fall | Spring |
| Decision Science elective | 88-223 Decision Analysis | Senior Honors Thesis or Elective | Senior Honors Thesis or Elective |
| Decision Science elective | Decision Science elective | Four Electives or additional Decision Science electives | Four Electives or additional Decision Science electives |
| Gen Ed | Gen Ed | | |
| Elective | Elective | | |
| Elective | Elective | | |

88-120 should be taken as the first course in the Decision Science sequence. It is intended for students in their first or second year; it is offered in Fall semesters. It may be taken as late as the junior year.

This is presented as a recommended plan for completing major requirements. The major can be completed in as few as two years (not that it must be), but students may not have time for other opportunities such as additional majors or study abroad. Students may declare their major as early as the third week of the spring semester in the freshman year. Students who are planning to attend the Washington Semester Program, to study abroad, to apply for the Heinz Accelerated Masters Program, or to pursue an additional major/minor may have a very different curriculum map and should consult early – and often – with the Decision Science Academic Advisor.

Students are encouraged to consider the Washington Semester Program as part of their education. Suitable courses will be considered as fulfilling requirements of electives in the major. Please send the course syllabus, along with a note explaining how the course addresses fundamental aspects of decision science in one of the six elective categories.

Additional Major in Decision Science

Students who elect Decision Science as an additional major must fulfill all of the requirements of the Decision Science major.

Students pursuing Policy and Management with an additional major in Decision Science and may only count 36-202, 88-220, 88-223, and 88-251 toward the completion of both majors.

Additional majors cannot count menu electives toward simultaneously fulfilling more than one major or minor. Students who are interested in an additional major in Decision Science should see the Academic Advisor of the Decision Science program.

The Major in Policy and Management

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The Policy and Management major prepares students for key decision-making and management roles in government, non-profit organizations, and business. The major emphasizes analytic approaches to decision making and practical management skills necessary for graduates to excel in both the public and private sectors. The multidisciplinary curriculum

merges frontier knowledge on both the ideals of decision making, policy, and organization, as well as the realities of individual and organizational behavior that must be confronted if high-quality outcomes are going to be attained.

The major is comprised of four clusters of courses. The Analytic Methods requirement consists of four courses that provide theoretical training and practical experience in problem solving and decision making. These courses provide systematic methods for dealing with the complexities that make decisions difficult, ranging from incorporating issues of risk and uncertainty in decision making to dealing with choices that have mutually conflicting objectives. For example, a business or government agency may need to decide on a policy for mitigating the uncertain impacts of air pollution while simultaneously trying to minimize the costs of such a policy on manufacturing. A firm might want to consider the uncertain reductions in security dangers from alternative policies to protect against terrorism. In this requirement, students will gain an appreciation of the economic analysis of complex decisions, as well as the trade-off between economic and political-based decision making.

The Organizational Context requirement is a course that emphasizes the analysis of how people organize and coordinate their behavior to perform complex tasks that are beyond the capability of any single individual. The course uses a multidisciplinary approach to analyze the potential shortcomings of large organizations, such as inertia, group-think, coordination failure, and bureaucratic infighting.

The Research Methods requirement is comprised of two courses focused on key methods for collecting and analyzing data that are needed to make informed decisions. Students learn to use interviews, surveys, experiments, and econometric methods to enhance their ability to test existing, and design new, policies.

Finally, the Electives requirement consists of five courses chosen by the student, in coordination with the Academic Advisor, to add depth and breadth to the major. These courses are chosen from five categories that emphasize different aspects of decision making and management: (1) policy making, (2) management, (3) technology and information, (4) international policy, and (5) political science and law. The selected courses may be from one category or from any combination of categories.

The Policy and Management major provides an excellent combination of theoretical and practical skills for students who intend to seek managerial positions. Because of its strong analytic orientation, it is also an excellent major for those who intend to go on to professional school programs in law, business, or public policy. It is also an appropriate choice for students pursuing graduate degrees in economics, political science, or decision science. One such graduate option is the accelerated masters program offered by the H. J. Heinz III School of Public Policy and Management, in which a student earns both a B.S. in Policy and Management and a M.S. in Public Policy and Management in five years.

Prerequisites

All Policy and Management majors must complete mathematics and statistics prerequisites (see below), by the end of the sophomore year.

| | |
|--|-------|
| Mathematics Prerequisites | Units |
| 21-111-21-112 Calculus I-II | 10-20 |
| or 21-120 Differential and Integral Calculus | |
| 21-122 Integration and Approximation | 10 |
| or 21-256 Multivariate Analysis | |

Students who successfully pass the proctored Calculus Assessment on campus or who receive credit through accepted standardized exams (such as AP, IB, or Cambridge) at the 21-122 level will be required to take a more advanced 21-xxx course for this prerequisite. 21-240 or 21-256 are suggested.

| | |
|---|-------|
| Statistics Prerequisite | Units |
| 36-201 Statistical Reasoning and Practice | 9 |

Curriculum

| | |
|--|-------|
| Analytical Methods | Units |
| 88-220 Policy Analysis I | 9 |
| 88-221 Policy Analysis II | 9 |
| 88-223 Decision Analysis | 9 |
| 88-451 Policy Analysis Senior Project | 12 |
| or 88-452 Policy Analysis Senior Project | |
| | 39 |
| Organizational Context | Units |

| | | |
|--------|-----------------|---|
| 88-260 | Organizations * | 9 |
| | | 9 |

* 70-311 Organizational Behavior may be substituted for 88-260.

| | |
|-----------------------------------|-------|
| Research Methods | Units |
| 36-202 Statistical Methods | 9 |
| 88-251 Empirical Research Methods | 9 |
| | 18 |

Electives 45 units

Complete at least 45 units (a minimum of five courses) from the following categories of courses. Most courses listed below are 9-unit courses, but some are less. When courses offered for less than 9 units are chosen, students should note that a minimum of 45 units is required, and should plan to take one or more additional courses as appropriate. The categories were created only to help in your selection process. You may select courses from one category or from any combination of categories.

At least 27 units (a minimum of three courses) must be Social and Decision Sciences courses (88-xxx).

| | |
|--|--------------|
| 1. Policy Making | Units |
| 36-303 Sampling, Survey and Society | 9 |
| 73-328 Health Economics | 12 |
| 73-331 Political Economy of Inequality and Redistribution | 9 |
| 73-352 Public Economics | 9 |
| 79-374 American Environmental History: Critical Issues | 9 |
| 88-365 Behavioral Economics and Public Policy | 9 |
| 88-412 Energy, Climate Change, and Economic Growth in the 21st Century | 9 |
| 88-430 Methods of Policy Analysis: International Policy | 9 |
| 88-435 Decision Science and Policy | 9 |
| 2. Management | Units |
| 70-321 Negotiation and Conflict Resolution | 9 |
| 70-332 Business, Society and Ethics | 9 |
| 70-342 Managing Across Cultures | 9 |
| 70-430 International Management | 9 |
| 80-241 Ethical Judgments in Professional Life | 9 |
| 80-244 Environmental Ethics | 9 |
| 80-344 Management, Environment, and Ethics | 9 |
| 88-252 Causal Inference in the Field: Using Data to Study Crime, Love, Sports & More | 9 |
| 88-341 Organizational Communication | 9 |
| 88-360 Behavioral Economics | 9 |
| 88-367 Behavioral Economics in the Wild | 9 |
| 88-402 Modeling Complex Social Systems | 9 |
| 88-406 Behavioral Economics in Organizations | 9 |
| 88-418 Negotiation - Domestic Focus | 9 |
| 88-419 Negotiation - International Focus | 9 |
| 3. Technology and Information | Units |
| 19-402 Telecommunications Technology, Policy & Management | 12 |
| 73-474 The Economics of Ideas: Growth, Innovation and Intellectual Property | 9 |
| 79-342 Introduction to Science and Technology Studies | 9 |
| 80-341 Computers, Society and Ethics | 9 |
| 88-319 Large-scale social phenomenon | 9 |
| 88-345 Perspectives on Industrial Research and Development | 9 |
| 4. International Policy | Units |
| 80-247 Ethics and Global Economics | 9 |
| 80-447 Global Justice | 9 |
| 84-362 Diplomacy and Statecraft | 9 |
| 84-389 Terrorism and Insurgency | 9 |
| 84-414 International and Subnational Security | 9 |
| 88-366 Behavioral Economics in Development | 9 |
| 88-384 Conflict and Conflict Resolution in International Relations | 9 |
| 88-411 Rise of the Asian Economies | 9 |

| | | |
|---|---|---|
| 88-412 | Energy, Climate Change, and Economic Growth in the 21st Century | 9 |
| 5. Political Science and Law Units | | |
| 70-364 | Business Law | 9 |
| 70-365 | International Trade and International Law | 9 |
| 73-408 | Law and Economics | 9 |
| 80-321 | Causation, Law, and Social Policy | 9 |
| 84-393 | Legislative Decision Making: US Congress | 9 |
| 84-402 | Judicial Politics and Behavior | 9 |
| 88-281 | Topics in Law: 1st Amendment * | 9 |
| or 88-284 | Topics in Law: The Bill of Rights | |
| 88-444 | Public Policy and Regulation | 9 |

* only one course (either 88-281 or 88-284) may count toward an elective requirement in the Policy and Management major.

NOTE: Some courses have additional prerequisites.

Policy and Management, B.S. Sample Curriculum

| Freshman | | Sophomore | |
|---|---|-----------------------------------|------------------------------|
| Fall | Spring | Fall | Spring |
| 36-201 Statistical Reasoning and Practice | 36-202 Statistical Methods | 88-220 Policy Analysis I | 88-260 Organizations |
| 21-120 Differential and Integral Calculus (or 21-111, depending on placement) | Pick Two (Freshman Seminar, 76-101, 79-104) | 88-251 Empirical Research Methods | Policy & Management elective |
| Pick One (Freshman Seminar, 76-101, 79-104) | Gen Ed or Elective | Gen Ed or Elective | Policy & Management elective |
| Gen Ed or Elective | 21-256 Multivariate Analysis (or 21-122) | Gen Ed or Elective | Gen Ed or Elective |
| Gen Ed or Elective | | Gen Ed or Elective | Gen Ed or Elective |

| Junior | | Senior | |
|------------------------------|------------------------------|--|--|
| Fall | Spring | Fall | Spring |
| Policy & Management elective | 88-223 Decision Analysis | 88-452 Policy Analysis Senior Project (or 88-451 in Senior Spring) | 88-451 Policy Analysis Senior Project (or 88-452 in Senior Fall) |
| Policy & Management elective | Policy & Management elective | Senior Honors Thesis or Elective | Senior Honors Thesis or Elective |
| Gen Ed | Policy & Management elective | Three Electives or additional Policy & Management electives | Three Electives or additional Policy & Management electives |
| Elective | Elective | | |
| Elective | Elective | | |

This is presented as a recommended plan for completing major requirements. The program can be completed in as few as two years (not that it must be), but students may not have time for other opportunities such as additional majors or study abroad. Students may declare their major as early as the third week of the spring semester in the freshman year. Students who are planning to attend the Washington Semester Program, to study abroad, to apply for the Heinz Accelerated Masters Program, or to pursue an additional major/minor may have a very different curriculum map and should consult early - and often - with the Policy and Management Academic Advisor.

Students are encouraged to consider the Washington Semester Program as part of their education. Suitable courses will be considered as fulfilling requirements of electives in the major. Please discuss course selections with the Academic Advisor after acceptance to the program.

Additional Major

Students who elect Policy and Management as an additional major must fulfill all of the requirements of the Policy and Management major.

Students pursuing Decision Science with an additional major in Policy and Management may only count 36-202, 88-220, 88-223, and 88-251 toward the completion of both majors.

Additional majors cannot count menu electives toward simultaneously fulfilling more than one major or minor. Students who are interested in an additional major in Policy and Management should see the Academic Advisor of the Policy and Management program.

The Minor in Decision Science

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The minor in Decision Science provides students with a selective survey of disciplinary perspectives. The courses present descriptive and normative approaches to judgment and decision making, as well as some application of theories and results to real-world problems. Students who elect Decision Science as a minor must complete the four core courses (below) and two electives from the elective set (below).

Students may double-count one course with another major/minor.

| | |
|--------------------------------------|-----------------|
| Curriculum | 54 units |
| Core Courses | 36 units |
| 88-120 Reason, Passion and Cognition | 9 |
| 88-220 Policy Analysis I | 9 |
| 88-223 Decision Analysis | 9 |
| 88-302 Behavioral Decision Making | 9 |

Elective Courses 18 units
Complete two courses from the following categories. At least one of the courses (9 units) must be a Social and Decision Sciences course (88-xxx).

| | |
|---|-------|
| 1. Biological and Behavioral Aspects of Decision Making | Units |
| 85-352 Evolutionary Psychology | 9 |
| 85-377 Attitudes and Persuasion | 9 |
| 85-442 Health Psychology | 9 |
| 88-342 The Neuroscience of Decision Making | 9 |
| 88-355 Social Brains: Neural Bases of Social Perception and Cognition | 9 |
| 88-360 Behavioral Economics | 9 |
| 88-365 Behavioral Economics and Public Policy | 9 |
| 2. Managerial and Organizational Aspects of Decision Making | Units |
| 70-311 Organizational Behavior * | 9 |
| 70-381 Marketing I | 9 |
| 70-460 Mathematical Models for Consulting | 9 |
| 88-221 Policy Analysis II | 9 |
| 88-260 Organizations * | 9 |
| 88-406 Behavioral Economics in Organizations | 9 |
| 88-418 Negotiation - Domestic Focus | 9 |
| 88-419 Negotiation - International Focus | 9 |
| 88-444 Public Policy and Regulation | 9 |
| 88-451 Policy Analysis Senior Project | 12 |
| or 88-452 Policy Analysis Senior Project | |

* Only one of these courses (either 70-311 or 88-260) may count toward an elective requirement in the Decision Science minor.

| 3. Philosophical and Ethical Perspectives on Decision Making | | Units |
|--|---|-------|
| 80-208 | Critical Thinking | 9 |
| 80-221 | Philosophy of Social Science | 9 |
| 80-245 | Medical Ethics | 9 |
| 80-305 | Choices, Decisions, and Games | 9 |
| 80-321 | Causation, Law, and Social Policy | 9 |
| 88-409 | Behavioral Economics Perspectives on Ethical Issues | 9 |

| 5. Economic and Statistical Methods for Decision Science | | Units |
|--|------------------------------------|-------|
| 70-460 | Mathematical Models for Consulting | 9 |
| 73-347 | Game Theory for Economists | 9 |
| 80-337 | Philosophy, Politics & Economics | 9 |
| 80-405 | Game Theory* | 9 |
| 88-255 | Behavioral and Applied Game Theory | 9 |
| 88-360 | Behavioral Economics | 9 |
| 88-367 | Behavioral Economics in the Wild | 9 |

* 80-405 and 88-316 are different courses and are not cross-listed.

| 5. Decision Science and Public Policy | | Units |
|---------------------------------------|---|-------|
| 84-393 | Legislative Decision Making: US Congress | 9 |
| 88-221 | Policy Analysis II | 9 |
| 88-365 | Behavioral Economics and Public Policy | 9 |
| 88-366 | Behavioral Economics in Development | 6 |
| 88-405 | Risk Perception and Communication | 9 |
| 88-412 | Energy, Climate Change, and Economic Growth in the 21st Century | 9 |
| 88-444 | Public Policy and Regulation | 9 |
| 88-451 | Policy Analysis Senior Project | 12 |
| or 88-452 | Policy Analysis Senior Project | |

| 6. Research Methods for Decision Science | | Units |
|--|---|-------|
| 36-303 | Sampling, Survey and Society | 9 |
| 70-460 | Mathematical Models for Consulting | 9 |
| 88-252 | Causal Inference in the Field: Using Data to Study Crime, Love, Sports & More | 9 |
| 88-319 | Large-scale social phenomenon | 9 |
| 88-402 | Modeling Complex Social Systems | 9 |
| 88-435 | Decision Science and Policy | 9 |

Note: Some courses have additional prerequisites

The Minor in Policy and Management

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Regardless of major, many Carnegie Mellon graduates will face managerial challenges and responsibilities in their professional lives. Whether these are in their area of expertise or in more general settings, these roles will to some degree require assumption of the responsibility for directing the work of others. The Policy and Management minor is intended for students who expect to need these management concepts and skills. At most, one course may be double-counted with another major or minor.

| Curriculum | 54 units | |
|----------------------------------|--------------------|---|
| 36 units Required Courses | | |
| 88-220 | Policy Analysis I | 9 |
| 88-221 | Policy Analysis II | 9 |
| 88-223 | Decision Analysis | 9 |
| 88-260 | Organizations* | 9 |

18 units* 70-311 Organizational Behavior may be substituted for 88-260.

Electives

Complete two courses from the following categories. At least one of the courses (9 units) must be a Social and Decision Sciences course (88-xxx).

| 1. Policy Making | | Units |
|------------------|---|-------|
| 36-303 | Sampling, Survey and Society | 9 |
| 73-328 | Health Economics | 12 |
| 73-331 | Political Economy of Inequality and Redistribution | 9 |
| 73-352 | Public Economics | 9 |
| 79-374 | American Environmental History: Critical Issues | 9 |
| 88-365 | Behavioral Economics and Public Policy | 9 |
| 88-412 | Energy, Climate Change, and Economic Growth in the 21st Century | 9 |
| 88-430 | Methods of Policy Analysis: International Policy | 9 |
| 88-435 | Decision Science and Policy | 9 |

| 2. Management | | Units |
|---------------|---|-------|
| 70-321 | Negotiation and Conflict Resolution | 9 |
| 70-332 | Business, Society and Ethics | 9 |
| 70-342 | Managing Across Cultures | 9 |
| 70-430 | International Management | 9 |
| 80-241 | Ethical Judgments in Professional Life | 9 |
| 80-244 | Environmental Ethics | 9 |
| 80-344 | Management, Environment, and Ethics | 9 |
| 88-252 | Causal Inference in the Field: Using Data to Study Crime, Love, Sports & More | 9 |
| 88-341 | Organizational Communication | 9 |
| 88-360 | Behavioral Economics | 9 |
| 88-367 | Behavioral Economics in the Wild | 9 |
| 88-402 | Modeling Complex Social Systems | 9 |
| 88-406 | Behavioral Economics in Organizations | 9 |
| 88-418 | Negotiation - Domestic Focus | 9 |
| 88-419 | Negotiation - International Focus | 9 |

| 3. Technology and Information | | Units |
|-------------------------------|--|-------|
| 19-402 | Telecommunications Technology, Policy & Management | 12 |
| 73-474 | The Economics of Ideas: Growth, Innovation and Intellectual Property | 9 |
| 79-230 | Arab-Israeli Conflict and Peace Process since 1948 | 9 |
| 79-342 | Introduction to Science and Technology Studies | 9 |
| 80-341 | Computers, Society and Ethics | 9 |
| 88-319 | Large-scale social phenomenon | 9 |
| 88-345 | Perspectives on Industrial Research and Development | 9 |

| 4. International Policy | | Units |
|-------------------------|---|-------|
| 80-247 | Ethics and Global Economics | 9 |
| 80-447 | Global Justice | 9 |
| 84-389 | Terrorism and Insurgency | 9 |
| 84-414 | International and Subnational Security | 9 |
| 88-366 | Behavioral Economics in Development | 9 |
| 88-384 | Conflict and Conflict Resolution in International Relations | 9 |
| 88-411 | Rise of the Asian Economies | 9 |
| 88-412 | Energy, Climate Change, and Economic Growth in the 21st Century | 9 |

| 5. Political Science and Law | | Units |
|------------------------------|---|-------|
| 70-364 | Business Law | 9 |
| 70-365 | International Trade and International Law | 9 |
| 73-408 | Law and Economics | 9 |
| 80-321 | Causation, Law, and Social Policy | 9 |
| 84-393 | Legislative Decision Making: US Congress | 9 |
| 84-402 | Judicial Politics and Behavior | 9 |
| 88-281 | Topics in Law: 1st Amendment* | 9 |
| or 88-284 | Topics of Law: The Bill of Rights | |
| 88-444 | Public Policy and Regulation | 9 |

* only one course (either 88-281 or 88-284) may count toward an elective requirement in the Policy and Management minor.

NOTE: Some courses have additional prerequisites.

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