

Social and Decision Sciences

What programs does SDS offer?

Decision Science

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Schedule an appointment:

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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.

Behavioral Economics, Policy, and Organizations

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The interdisciplinary field of Behavioral Economics integrates perspectives from Economics and Psychology to understand and predict human behavior in economic contexts. There has been an explosion of interest from government agencies to incorporate the insights from behavioral economics into the design of public policy and in an executive order, President Obama urged government agencies to recruit behavioral economists. Private and public sector organizations are increasingly relying on behavioral economics to help them improve their organizational effectiveness and profitability.

SDS's exceptional faculty in Behavioral Economics is at the forefront of research and teaching in this field and regularly consult with government and business on topics such as the impact of predatory lending practices on public welfare, how to design institutional practices to reduce the biases of stock traders, the design of interventions to motivate employees, how the government can increase participation in social service programs, interventions to increase patients' compliance with medication, and how businesses can reduce inequality in the workplace. SDS offers the largest selection of behavioral economics courses in the world. Students in this major—the first and only major of its kind—will be uniquely trained in the integration of Economics and Psychology and will have a solid grounding in quantitative methods. Applied projects in courses will teach students how to collect original data, design field and laboratory experiments, and analyze data using a variety of methods. Students will be well equipped to enter a wide range of professions and graduate degree programs.

Policy and Management

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The Policy and Management major prepares students for key decision-making and management roles in government, nonprofit 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.

Courses in the major 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. Students gain an appreciation of the economic analysis of complex decisions, as well as the trade-off between economic and political-based decision making.

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.

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The Department of Social and Decision Sciences (SDS) 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 and private sectors and in advanced 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.

** Students develop strong quantitative and analytical research skills*

** Students work together to solve/explore unstructured real-world problems and to make contributions from diverse disciplines*

** Emphasis on undergraduate research*

** Easy access to faculty*

** Departmental core that includes courses in decision analysis, empirical research, organizations, behavioral economics, and policy analysis*

** Experiential learning through the Carnegie Mellon University Washington Semester Program, study abroad, and internships*

SDS 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 and 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.

For more information, please contact the academic advisor for the specific program in which you are interested.

	Behavioral Economics, Policy, & Organizations	Decision Science	Policy and Management
Math Requirements	10-20 units 21-120 Differential & Integral Calc (or 21-112)	10-20 units 21-120 Differential & Integral Calc (or 21-112)	20-30 units 21-120 Differential & Integral Calc 21-256 Multivariate Analysis*
Quantitative Requirements	36 units 36-201 Statistical Reasoning 36-202 Statistical Methods 88-251 Empirical Research Methods 88-252 Causal Inference	45 units 36-201 Statistical Reasoning 36-202 Statistical Methods 88-251 Empirical Research Methods 88-223 Decision Analysis additional analytical methods	36 units 36-201 Statistical Reasoning 36-202 Statistical Methods 88-251 Empirical Research Methods 88-223 Decision Analysis
Economics Requirements	18 units 73-102 Principles of Microeconomics** 73-160 Foundations of Microeconomics	9 units 73-102 Principles of Microeconomics**	18 units 73-102 Principles of Microeconomics** 88-221 Policy Analysis II***
Behavioral Econ Requirements	18 units 88-360 Behavioral Economics 88-367 Behavioral Economics in Wild	0 units	0 units
Psychology Requirements	18 units 88-120 Reason, Passion, Cognition 88-302 Behavioral Decision Making	27 units 88-120 Reason, Passion, Cognition 88-302 Behavioral Decision Making 85-211 Cognitive Psychology	0 units
Other Requirements	0 units	0 units	9 units 88-260 Organizations*
****Electives From Major List	36 units	45 units	45 units
Senior Project and Honors	9 units 88-453 Capstone in Behavioral Economics	0 units	12 units 88-451 or 452 Policy Analysis Senior Project
Total Units Required for Major	145-155	135-145	140-150

* other substitutes are available

**If you have already taken 73100 Principles of Economics or 88220 Policy Analysis I, then your requirement is COMPLETE.

You do NOT need to take 73102 if you have taken 73100 or 88220. 73102 (or if you have previously completed 73100) is replacing 88220 (which has been discontinued).

***Title will be changed, but the requirement will remain

****Electives must be unique to a specific major, there is NO double counting electives between majors. Note: Core courses in one major CANNOT count as an elective for another