Department of Social and Decision Sciences Courses

About Course Numbers:

Each Carnegie Mellon course number begins with a two-digit prefix that designates the department offering the course (i.e., 76-xxx courses are offered by the Department of English). Although each department maintains its own course numbering practices, typically, the first digit after the prefix indicates the class level: xx-1xx courses are freshmen-level, xx-2xx courses are sophomore level, etc. Depending on the department, xx-6xx courses may be either undergraduate senior-level or graduate-level, and xx-7xx courses and higher are graduate-level. Consult the Schedule of Classes *(*https://enr-apps.as.cmu.edu/open/SOC/SOCServlet*) each semester for course offerings and for any necessary pre-requisites or co-requisites.*

88-120 Reason, Passion and Cognition
Fall: 9 units
How do we make decisions? Reason, Passion, and Cognition will be an introduction to the psychology of preference, judgment, and choice. Why do people behave in ways that cannot be defended as "rational" - and how do these deviations inform us about the processes that the mind uses to make fast-and-frugal decisions? The course will focus on the ways that cognitive and emotional processes relate to decisions made in the laboratory and in everyday decision making and will be based on rigorous experimental research.

88-150 Managing Decisions
Fall: 9 units
We make decisions constantly, but making good decisions is hard. Future employers will pay handsomely for decisions that are well thought out, defendable, and understandable. How do we decide how to decide? What is a "good" decision? This course will introduce normative decision-making concepts, including how to formulate decision problems and techniques that account for uncertainty and time preference. Students will learn how to place a quantitative value on information. The course will introduce key decision-making concepts using applications from fields such as decision sciences, business and economics, and public policy. Although prior knowledge of Microsoft Excel spreadsheets is not required, prior familiarity with Excel and a general level of numeracy will be useful.

88-198 Research Training: Social and Decision Sciences
Fall and Spring
This course is part of a set of 100-level courses offered by Dietrich departments as independent studies for second-semester freshmen, and first- or second-semester sophomores, in the College. In general, these courses are designed to give students some real research experience through work on a faculty project or lab in ways that might stimulate and nurture subsequent interest in research participation. Faculty and students devise a regular meeting and task schedule. Each Research Training course is worth 9 units, which generally means a minimum of about 9 work-hours per week. These courses are offered only as electives; i.e., they cannot be applied toward a college or major requirement, although the units do count toward graduation as elective units. Additional details (including a roster and descriptions of Research Training Courses available in any given semester) are available in the Dietrich Academic Advisory Center.

88-200 SDS Colloquium
Spring: 3 units
The SDS Colloquium is an opportunity for students to gather and discuss topics related to the various opportunities available both during the undergraduate career and after graduation. Students will explore areas such as academic planning, personal and professional values, and professional communication/communication skills. Co-curricular experiences such as: study abroad, research, internship/career planning and goal setting, and graduate school are among the topics to be presented. Students will have the opportunity to talk with SDS advisors, faculty, and alumni as well as with other professionals from around the University. Sophomore or junior standing is required.

88-221 Markets, Democracy, and Public Policy
Spring: 9 units
In this course, students will achieve an analytical understanding of some of the most pressing policy challenges of our day. The focus of the course lies in the interaction between markets and government. The course will first introduce analytical foundations of how markets, voting and governments work, and important shortcomings of each. The course will briefly touch on a comparative cross-national perspective on the balance between markets and government pursued in different countries. The second part of the course focuses on a substantive understanding of current policy issues, including health care, inequality, economic conditions of the politically pivotal middle class, resource constraints, globalization, technological change, and the role of all of these topics in political debates, and voter demands.
Prerequisite: 73-102

88-223 Decision Analysis
Spring: 12 units
This course offers practical guidance about how to make better decisions and teaches students how to use modeling to do decision analysis. We analyze decisions involving uncertainty, risk, and time delay. In addition to methods of decision analysis, the course will also emphasize sensitivity analysis and communication of recommendations.
Prerequisites: 36-247 or 36-217 or 36-200 or 36-207 or 36-211 or 70-207 or 36-200 or 36-225 or 36-201

88-230 Human Intelligence and Human Stupidity
Fall: 9 units
By some standards, humans are an incredibly intelligent species. We have set foot on the moon, split the atom, and produced extraordinary works of art and literature (including the complete works of Shakespeare, which, despite theoretical accounts to the contrary, no amount of monkeys on typewriters has ever been able to duplicate). And yet. we are also the species that has brought about the Darwin Awards, spent $125 million sending a probe to Mars which was unable to function because engineers failed to convert inches to centimeters, and produced cringe-worthy works of art and literature (including the 1964 movie "Santa Claus Conquers the Martians" which no amount of monkeys on typewriters would ever want to duplicate.). What is intelligence and how does it vary across individuals and over our lifespans? What are we good at, and what are we bad at, and why? Are there things that that make us dumber? Are there things we can do to make ourselves smarter? How should what we know about the range of human intellectual abilities guide policy, education, law, medicine, and business; what implications does this have regarding the tasks/jobs that humans should be doing and the tasks/jobs that machines ought to do? Using cutting edge research from psychology and decision science, this course will explore the strange contradiction that defines the human experience: How are we simultaneously so smart and so dumb?

88-231 Thinking in Person vs. Thinking Online
Intermittent: 9 units
Being online changes how we think. Different media lead us to ask different questions, remember (or forget) different information, attend to different details, and interact with other people in different ways. These types of thinking aren't inherently better or worse, but they may be better or worse for facilitating specific goals. Too often, we use a particular medium/technology without considering how it will influence our thinking. This can lead us to be less efficient or less effective at a task than we otherwise might be, or can qualitatively change the nature of our outcomes. In this class, we will explore how the media we use affects the character of our thinking, so as to enable students to make mindful and deliberate choices about how to interact with media in ways that support the type of thinking desired and appropriate for their goals. Moreover, we will examine how to optimize media for specific goals in important applied domains, such as education, medicine, policy, child-rearing, and dating.

88-251 Empirical Research Methods
Fall: 9 units
This course teaches students how to evaluate and conduct original research regarding human behavior, whether it be in economic, social, or political settings. The course gives students practical experience in many of the most commonly used research techniques, including surveys, experiments, and quasi-experimental analysis. Although the course focuses primarily on the relationship between formulating research questions and implementing the appropriate methods to answer them, students can expect regularly to apply the statistical techniques learned in the course prerequisites, including regression.
Prerequisites: 36-247 or 36-207 or 36-201 or 36-200

88-252 Cause and Effect
Spring: 9 units
Causal questions are pervasive in the social and behavioral sciences, and empirical researchers often use regression analysis as a tool for tackling such questions. This course focuses on the scientific problem of analyzing causal hypotheses in real-world settings, not on the mathematical details of regression. After clearly distinguishing prediction from causation, we discuss how to represent causal hypotheses and how to use regressions to analyze both predictive and causal hypotheses. Using in-class data exercises throughout, we will examine how to move from an interesting but somewhat vague question about the world (e.g., do police discriminate based on race and gender, do NFL athletes choke under high pressure, does parenthood improve happiness) to a clear statistical model that, when estimated, meaningfully addresses the question asked. The course emphasizes causal analysis as the main research goal and multivariate linear regression as the main statistical tool. After mastering basic techniques, we will introduce students to more advanced econometric approaches such as panel regressions and instrumental variables to deal with trickier settings in which causal inference is more challenging (e.g., do more guns lead to more violence?). In keeping with the hands-on philosophy of the course, a central focus of the semester will be a group research paper/presentation where students will have the opportunity to formulate and empirically test a research question of their choosing. Students will learn how to find, clean, and analyze a new dataset, and then concisely communicate their findings in the form of a scientific paper (and accompanying presentation). The research project makes this course excellent preparation for any student who hopes to ultimately write an undergraduate thesis.
Prerequisites: 36-202 or 85-309 or 70-208 or 36-309

88-255 Strategic Decision Making
Fall: 9 units
How do people navigate social interactions when their goals are in conflict? When should a person cooperate and when should a person pursue self-interest in an ongoing social interaction? How can a business establish strategic partnerships that create value and at the same time battle with competitors to take advantage of the value they create? Strategic decision making requires a framework to think through the implications of cooperation and of competition. This course gives you a systematic approach to understanding how people, firms, or countries interact with one another to achieve their own goals. We focus on the practical application of theory-based strategic principles and on their behavioral validity (whereas traditional game theory courses usually focus on formal modeling techniques). Readings will focus on real-life stories accompanied by a full analysis of the principles involved. The class will be organized as a seminar, centered around discussion, not lecture. Students will also be placed in the role of strategist in occasional simulations in class.

88-261 Health Policy
Fall: 9 units
This course is a deep dive into the US healthcare industry, the economy's biggest sector. You will 1) learn about the most pressing contemporary health and healthcare issues faced by American society; 2) understand the structure of the US healthcare system and the decision-making of its main stakeholders (patients, physicians, hospitals, insurers, governments, and policymakers); and 3) deploy the tools from modern behavioral science and economics to think through policies that improve health and social welfare.

88-275 Bubbles: Data Science for Human Minds
Fall: 9 units
Open discussions turn into echo chambers; optimistic traders pump good money into bad stocks; we fail to see, or sympathize, beyond the limits our culture, upbringing, or education prescribe. These bubbles and #8212; information bubbles, market bubbles, social bubbles and #8212; drive us to ask some of the most basic questions in the social sciences: Why do we believe the things we do? Where do our ideas come from, and how can we measure the consequences of their conjecture, spread, and evolution? How can we design systems to make us better thinkers? In this introduction to the "big data" study of human behavior, we'll learn some key concepts and simple computational tools for studying how people gain and share information, with a focus on what they say and write. And we'll apply these tools to social behaviors from the writing of Harry Potter fan fiction to online trolling, to science, markets, and liberal democracy itself. The class will include conceptual, computational, and data-driven investigations; students in social science, humanities, engineering and the sciences are equally welcome. At the end of this course, students will be able to build models for how people think and talk to each other, to see how thinking and talking work in both the past and present, and to imagine, and even design, systems that might help us think, and talk, together more effectively in the future. Pre-requisites: willingness and initiative to work with real-world data.
Prerequisites: 36-200 or 70-207

88-281 Topics in Law: 1st Amendment
Fall: 9 units
In their firm desire to perfect the new Constitution, which defined and limited the powers and roles of their new government, the founding fathers insisted on explicit statements that would protect the rights of the new nation's citizens. Indeed, the protection of these essential rights in many ways drove and defined their successful rebellion from Britain. This impulse resulted in ten amendments to the Constitution, which we have come to know as the Bill of Rights. The very first (and arguably considered at the time as the most essential) of these was the First Amendment, which we sometimes call the "free speech" amendment to the Constitution. This amendment guarantees every U.S. citizen five freedoms: freedom of religion, speech, press, peaceable assembly, and the freedom to petition the government for redress of grievances. This course examines the historical and philosophical roots of this key constitutional amendment, how it has been fleshed out and defined over time through case law, and the bases of some more recent critics of this amendments and current interpretations.

88-284 Topics of Law: The Bill of Rights
Spring: 9 units
This course examines the history and place of the Bill of Rights in our nation's constitutional framework. It focuses on the historical origins of the U.S. Constitution, of each of the first ten amendments to the Constitution (that we refer to as the "Bill of Rights"), how the meanings and interpretations of these have evolved over time, and what they mean to us today. Each article of the Bill of Rights will be examined in terms of its original intentions, and then through cases that have challenged and been interpreted through the Bill's articles.

88-300 Programming and Data Analysis for Social Scientists
Spring: 9 units
This course presents an introduction to computational thinking through practice with data analysis. Students will develop extensive expertise using the statistical programming language R. Designed primarily with social science majors in mind, students will use a variety of data structures to represent information and solve problems. The course is conducted in a "flipped classroom" style, and places a heavy emphasis on hands-on programming and #8212; in every class, students will practice writing computer programs to conduct analysis and explore social science phenomena. Students will develop skills in all facets of the data analysis pipeline, from installing and loading packages to reading-in files to data cleaning, munging, visualization and modeling. The course is primarily intended for students who have limited familiarity with coding, and assumes no previous exposure to R.
Prerequisites: 36-200 or 36-201

88-302 Behavioral Decision Making
Fall and Spring: 9 units
Behavioral decision making is the study of how people make decisions, in terms that can eventually help them to make better decisions. It draws together research from psychology, economics, political science, and management, among other fields. It has applications that range from managing potentially hazardous technologies, to involving patients more fully in the choice of medical procedures, to the design of computer-interactive systems. The course covers behavioral theories of probabilistic inference, intuitive prediction, preference, and decision making. Topics include heuristics and biases in inference and prediction, risk perceptions and attitudes, strategies for combining information from different sources and dealing with conflicting objectives, and the roles of group and emotional processes in decision making. The course emphasizes the mutually reinforcing relationship between theory and application.
Prerequisites: (36-225 or 36-217 or 36-247 or 36-200 or 36-220 or 70-207 or 36-211 or 36-207 or 36-201) and 88-120

88-312 Decision Models and Games
Spring: 9 units
Humans often make decisions in changing and uncertain situations. A car driver entering a new city must adjust decisions rapidly while moving along heavy traffic; firefighter crews entering a burning building must maintain awareness of the development of fire; citizens in a country must change their activities based on the evolution of a pandemic and the restrictions imposed. While challenging, humans are an adaptable species. We plan and re-adjust our plans to changing conditions; we keep aware of potentially new courses of action; and we manage our limited time, information, and attention to changing environments. How do humans make decisions in dynamic situations? This course will explore human decision making as a dynamic process resulting from human interactions with the environment. The course uses decision games to illustrate how humans learn and adapt to changing conditions of choice, and computational models to simulate decision processes and environmental dynamics. Decision Models and Games will provide: (1) foundational perspectives for using models to represent the dynamics of environments and human decision processes; (2) tools to build computational models of human decision making and of dynamic environments; and (3) practical illustrations of how models and games can be used to understand and generate solutions to a wide range of decision problems, from simple choices to large scale consequential decisions.
Prerequisites: 36-201 or 70-207 or 36-200

88-323 Policy in a Global Economy
Fall: 9 units
From the dawn of the New Deal through the presidency of Barack Obama, the U.S. led the development of an open, global system of relatively free trade and global capital flows. In the current political environment, leaders on both the American political left (like Senator Bernie Sanders) and the political right (like Donald Trump), have called into question this bipartisan consensus in favor of freer trade and investment. That turn away from globalization has been accelerated by the COVID-19 pandemic. Was the earlier pro-globalization consensus wrong? Is globalization good or bad for the U.S. economy? What are the impacts of globalization on the rest of the world? How has economic globalization impacted the environment and income inequality in the U.S. and around the world? How should the Biden Administration seek to manage international economic policy? This course provides future policy makers and managers with the knowledge and analytical tools necessary to understand economic globalization and its effects. These issues will be studied using the analytical tools and concepts of international economics. Guest lectures and case studies will provide a range of perspectives on current policy debates. The course will also examine science-based policies that could maximize the benefits and minimize the disruption generated by globalization. The fall 2021 version of the course will examine the global macroeconomic impact of the COVID-19 pandemic and the ways in which international policy coordination and #8212; or lack thereof and #8212; worsened that impact.
Prerequisite: 73-102

Course Website: https://api.heinz.cmu.edu/courses_api/course_detail/90-860/

88-341 Team Dynamics and Leadership
Fall: 9 units
Much of the work in groups and organizations consists of communication. You communicate to get information that will be the basis of decisions, to provide a vision for the people who work for and with you, to coordinate activity, and to sell yourself and your work. The goal of this course is to identify sources of communication problems within an organization and ways to overcome them. To do this requires that we know how communication normally works, what parts are difficult, and how to fix it when it goes wrong. The focus of this course is on providing you with a broad understanding of the way communication operates within dyads, work groups, and organizations. This course is not a practicum in public speaking or writing, although you will get some experience writing, speaking and managing impressions. Rather the intent is to give you theoretical and empirical underpinnings for the communication you will undoubtedly do when you return to work. Readings come from both the research and the managerial literatures. Among the topics considered are managerial communication, persuasion and conformity, self presentation and person perception, social networks. Cases and group projects give you an opportunity to apply what you've learned.
Prerequisites: 36-220 or 36-225 or 70-207 or 36-217 or 36-201 or 36-247 or 36-207 or 36-200

88-342 The Neuroscience of Decision Making
Intermittent: 9 units
Because we are human, feelings provide the basis for reason and rational decision-making. Consider for example, that brain-damaged patients left devoid of emotion struggle to make the most elementary decisions: while they are able layout the pros and cons of a decision, but they are unable to make the final choice. This course will discuss seminal discoveries in affective neuroscience underlying decision-making.
Prerequisites: 88-120 or 85-211

88-344 Systems Analysis: Environmental Policy
Intermittent: 9 units
Systems Analysis: Environmental Policy provides an introduction to how environmental policies have been and can be designed/created, implemented, and evaluated amidst complex information-based, social, political, and cultural processes. The course emphasizes a systems-based methodological approach for addressing the complexities involved in framing, analyzing, and designing an implementation plan for policy construction. The course also explores through landmark and contemporary case studies several dimensions of environmental policy-making: - Contextual, historical, and structural aspects of environmental policy-making at the local, state, federal, and international levels - Use of quantitative and qualitative analytical tools (from core program + new tools) - The process of how policies derive their meanings.

88-355 Social Brains: Neural Bases of Social Perception and Cognition
Intermittent: 9 units
By some accounts, the large expansion of the human brain evolved due to the complex demands of dealing with social others?competing or cooperating with them, deceiving or empathizing with them, understanding or misjudging them. This discussion-based seminar surveys the emerging field of social cognitive neuroscience and its multi-level approach to understanding the brain in its social context. We will review current theories and methods guiding the field and recent research examining the neural bases of social processes, including: theory of mind, empathy, emotion, morality, among others. We will also discuss broader questions that apply to the specific topics that the course covers, including: What are appropriate levels of description for the target phenomena? How can different disciplines in neuroscience and the social sciences contribute to social neuroscience research? What can we learn from animals? behavior about human social cognition? Do neural systems exist that are specialized for social cognition, or do the systems that participate in social cognition have more general cognitive functions?
Prerequisites: 85-355 or 85-310 or 85-340 or 88-251

88-360 Behavioral Economics
Fall: 9 units
This course introduces students to behavioral economics, an emerging subfield of economics that incorporates insights from psychology and other social sciences into economics. We will examine evidence on how human behavior systematically departs from the standard assumptions of economics, and then investigate attempts by behavioral economists to improve economic analyses.
Prerequisites: (21-120 or 21-112) and (73-100 or 88-220 or 73-102)

88-365 Behavioral Economics and Public Policy
Fall: 9 units
Economics has up to now been the social science that has been most broadly and deeply involved in public policy. With its rational choice perspective, the economic perspective has tended to favor certain types of policies namely those that enhance the efficiency of market mechanisms and lower the cost of information. In this course we will spend the first several classes reviewing the assumptions, implications for public policy and limitations of the rational choice perspective. The remainder of the course will then be devoted to examining different public policy issues, including saving, health care, crime and drug abuse, through the competing lenses of traditional and behavioral economics.
Prerequisites: 73-102 or 73-100 or 88-220

88-366 Behavioral Economics of Poverty and Development
Intermittent: 9 units
This course will introduce students to the study of economic development and poverty alleviation, with a special focus on recent insights from the intersection of psychology and economics. We will primarily focus on the health, microfinance, agriculture, and education sectors in developing countries. The course will have a methodological component largely centered on using experiments to evaluate interventions and policies that apply to households, small firms, and farms. While we will cover standard economic approaches, we will give extra attention to how a behavioral lens can help in both understanding development issues (e.g. barriers to household risk management) and in designing effective interventions (e.g. the timing of fertilizer sales).
Prerequisites: (88-220 or 73-100 or 73-102) and 36-202

88-367 Behavioral Economics & Field Experiments in Organizations
Spring: 9 units
Behavioral Economics is a sub-field of economics that, relying on insights from psychology and decision-making, aspires to describe actual behavior with greater empirical accuracy and psychological realism than that implied by the standard neoclassical model. In this course, we will investigate the success of this approach in explaining ostensible anomalies in the "wild" such as under-savings for retirement, over-consumption of unhealthy food, extreme aversion to losses among investors, workers, and home-owners, the over-confidence of corporate CEOs and NFL general managers, and the influence of emotions on domestic violence, stock market activity, and risk-taking. We will first document and review the underlying theory for three conceptual departures from the standard model -non-standard preferences (e.g., present-bias, reference dependence), non-standard beliefs (e.g., overconfidence, gambler''s fallacy), and non-standard decision-making (e.g., heuristics, emotions, framing effects)-and then quickly move to assess the evidence for these claims in field settings. We will additionally explore how markets respond to behavioral biases, and discuss recent research in behavioral policy with an emphasis on policies aimed at increasing savings, improving food choice, and heightening program take-up and compliance. The course will be paper-centric and we will review a variety of popular empirical methods from field experiments to quasi-experimental approaches (e.g., estimation through regression-based panel analyses, difference-in-differences, and instrumental variables). Student evaluation will be based on a mix of exams, problem sets, written assignments, and class participation.
Prerequisites: 73-102 and 36-202

88-372 Social and Emotional Brain
Intermittent: 9 units
This course provides an introductory survey of the methods and findings in social and affective neuroscience. Half the course is lecture style and covers the basics of neuroanatomy, neurochemistry, and neuroendocrine systems, as well as a survey of relevant neuroscience methods (neuroimaging, neuropsychological, psychophysiological, transcranial magnetic stimulation, etc.). The other half of the course is more like a seminar, where each week we will discuss a couple seminal empirical papers from the scientific literature. Topics include interpersonal relationships, prosocial behavior, aggression, prejudice, emotion regulation, stress, etc.
Prerequisite: 85-102

88-379 Data-Driven Decision Analysis
Intermittent: 9 units
Business managers and public policymakers who make good decisions are in high demand and are richly rewarded. Increasingly, that decision making must occur in dynamic, data-rich environments. In those environments, having an extensive analytical toolkit is essential for success. Building on the foundations laid by prior coursework, we will cover advanced analytical topics from the decision sciences, such as utility function elicitation, optimal decision making under uncertainty and imperfect information, valuing flexibility with real options, portfolio theory, artificial intelligence (AI) and evolutionary computation methods, robust decision making, and Monte Carlo simulation and variance reduction methods. The focus of this course is normative, rather than descriptive decision making. The course will make extensive use of Microsoft Excel and students are expected to possess a high level of numeracy upon enrollment. Although we will touch on the theoretical foundations of the material, our primary focus will be on getting our hands dirty by using the techniques covered. The material covered in this class will be taught using real-world problems and place a high value on using messy, often-incomplete real-world data where the strengths and weaknesses of various tools can be evaluated. Assignments in the course will be "case" style, and include applications to subjects such as climate change, corporate investment, energy policy, geoengineering, and health policy risks. Students will evaluate various decision problems in each case and present and defend their analyses.
Prerequisites: (36-207 or 36-200 or 70-207 or 36-225) and (19-301 or 19-351 or 70-257 or 88-223)

88-380 Dynamic Decisions
Intermittent: 9 units
Decisions we make every day may range from simple to highly complex. For example, during driving we make many effortless and routine decisions (judging the distance to the front car, the speed, the directions), while other decisions such as allocating limited time over multiple school projects in the presence of overwhelming distractions may be very complex. These and many of the decisions we make over-time are, however, very similar. The way humans make dynamic decisions depend on individualized experience, cognitive abilities, and their interaction with the particular conditions of the decision environment. In this course, students will understand how decisions are made from experience, in different dynamic situations; how our cognitive processes (e.g., attention, memory, risk tendencies, and other factors), and how the characteristics of the environments (e.g., time constraints, workload, dynamic change) influence the way those decisions are made. Students will use simulations of dynamic systems (e.g., microworlds/decision games) to understand how humans learn and adapt to changing conditions of choice. Students will also learn to construct cause-effects causal loop and stock-and-flow diagrams to represent dynamic systems, and to construct actionable models of those systems using VENSIM-PLE. Students will learn the process of analyzing complex dynamic decision making problems by working on a semester-long project. In a particular case of an accident or a disaster (natural or man-made) in a context (e.g., aviation, management, social issues and others) students will analyze the sources of error, construct causal-loop diagrams, stock and flow diagrams and represent their models in VENSIM-PLE to construct scenarios that help analyze the consequences of potential decisions in the case example. Students will learn to interpret simulation results to provide decision recommendations, in a final report.
Prerequisites: (85-102 or 88-120 or 88-230 or 85-211 or 85-213 or 85-241) and (36-200 or 36-201)

88-388 Psychological Models of Decision Making
Intermittent: 9 units
This course provides an introduction to the techniques and theories for modeling decision making. The topics covered include: signal detection theory, normative and descriptive decision modeling, multidimensional scaling, and diffusion models. The course will include an introduction to the theory behind the models as well as "hands on" computational applications of the models with data. The topics covered in this course can be used in a variety of applied settings-ranging from medical and public policy to marketing and psychological research-to produce simplified representations of seemingly complex phenomena.
Prerequisites: (36-200 or 36-201) and (21-112 or 21-120)

88-397 SDS Undergraduate Research - mini
All Semesters
Students conduct research under the supervision of a Social and amp; Decision Sciences faculty member. Students who wish to engage in research should seek out a faculty member whose interests are appropriate to the research. Prerequisite: Students must also complete an "Independent Study/ Research for Credit" form, available from the SDS advisor in Porter 208A. Permission of a faculty sponsor.

88-398 Independent Study
Fall and Spring
Students conduct independent academic study under the supervision of a Social and amp; Decision Sciences faculty member. Students who wish to engage in an independent study should seek out a faculty member whose interests are appropriate to the topic. Students must also complete an "Independent Study/Research for Credit" form, available from the SDS Advisors in Porter 208A and 208G.

88-399 Undergraduate Research
Fall and Spring
Students conduct research under the supervision of a Social and amp; Decision Sciences faculty member. Students who wish to engage in research should seek out a faculty member whose interests are appropriate to the research. Students must also complete an "Independent Study/Research for Credit" form, available from the SDS Advisors in Porter 208A and 208G.

88-405 Risk Perception and Communication
9 units
Throughout their lives, people make decisions about risks that may potentially affect their health, safety, finances, use of technology, and effects on the environment. This course will review the risk perception and communication literature, focusing on theoretical and methodological issues as well as practical implications for educators, public health officials, engineers, economists, and other experts who aim to teach people about risks. We will discuss how to design surveys to increase our understanding of the problems people face when making decisions about specific risks, and how to design communication materials that help people to improve their decisions. We will highlight examples and applications taken from multiple disciplines, including health psychology, adolescent decision making, environmental science, and engineering.
Prerequisites: 36-220 or 36-217 or 36-225 or 36-247 or 36-207 or 70-207 or 36-201

88-406 Behavioral Economics @ Work
Fall: 9 units
Non-profit organizations and businesses are increasingly incorporating insights from behavioral economics and other behavioral sciences into their strategies. This course provides an overview of psychological and economic factors that affect the choices and behavior of individuals within organizations. The course will review empirical research on applications of behavioral insights to a wide range of organizational areas including product pricing, marketing, designing incentives schemes, motivating employees, fundraising, and behavior change. In-class exercises and group projects will supplement the lectures and provide students with hands-on experience in designing solutions to organizations challenges based on behavioral insights. The course emphasizes experimentation as a primary tool for informing organizations decision-making and accurately measuring the effectiveness of behavioral interventions.
Prerequisites: 73-102 or 73-100 or 88-220

88-411 Rise of the Asian Economies
Intermittent: 9 units
For most of the past quarter century, no region of the world has been more economically dynamic than Asia. This course is designed to provide students with the essential knowledge necessary to evaluate opportunities and risks in Asia. The course will use analytical tools drawn from economics and finance, business cases, and guest lectures to focus on the key strengths that sustained economic growth in East Asia for decades, the weaknesses that undermined that growth in the late 1990s, and what lies ahead. The course will also examine Indian economic growth since the early 1980s, and compare India's experience with that of the East Asian economies. A special focus will be placed on recent developments in India and China and the prospects for continued growth in those countries over the next decade.
Prerequisites: 73-100 or 73-150 or 73-102 or 88-220

88-415 Science and Innovation Leadership for the 21st Century: Firms, Nations, and Tech
Fall: 9 units
Science and Innovation Leadership for the 21st Century introduces students to the fundamental principles surrounding global competitiveness and technological change in the 21st century. The course is broken into three sections. The first section introduces students to competing economic, sociological, and political science theories on the structures supporting technological change. The second section presents the contemporary literature on technological change. The concluding section leverages lessons from the preceding two sections to evaluate national innovation systems, and the factors that lead to national comparative advantage. Students should leave the class able to reflect competently on what the existing literature tells us about the factors influencing global technology competitiveness, and on how modern changes in the structures supporting innovation as well as technology itself may be changing the rules of the game for firms and for nations. The course is open to undergraduate juniors and seniors.

88-418 Negotiation: Strategies and Behavioral Insights
Fall: 9 units
Negotiation is a critical skill that is essential for success in today's world. Decision-makers use negotiation to reach agreements with co-workers, bosses, clients, service providers, subordinates, firms, family, roommates, and friends. Regardless of one's career path, learning how to negotiate effectively is important. This course provides a systematic and insightful approach to negotiation - the art and science of securing agreements between interdependent parties. Through experiential exercises, students will learn to analyze the features of the negotiation environment, develop an understanding of effective negotiation strategies and tactics, and identify the behavioral barriers and psychological factors that may prevent decision-makers from reaching wise agreements. The exercises, which feature negotiations in a variety of contexts including business negotiations, salary negotiations, interpersonal negotiations, and team negotiations, are designed to provide students with an opportunity to practice new strategies in a low-risk environment, receive feedback, and apply new knowledge to subsequent exercises. In-class discussions and lectures will complement the exercises, allowing students to explore and apply theoretical concepts to practical scenarios. This course is appropriate for students of any major who are interested in refining their negotiation skills.

88-419 International Negotiation
Fall: 9 units
Negotiation is a process in which two or more parties undertake a process to resolve conflicting interests. Decision makers use negotiation in a variety of circumstances to reach agreements among countries, among employers and employees, among firms, and among family and friends. International section: The objective of this course is to understand the process of negotiations and how the structure of the negotiation environment affects the outcomes achieved. Students will learn to analyze the features of the negotiation environment, develop an understanding of effective negotiation strategies, and identify the barriers to reaching wise agreements. This course will focus on negotiations in primarily international contexts.

88-435 Decision Science and Policy
Spring: 9 units
Research in the social sciences has extensively investigated how decision makers behave when they encounter many different and difficult decision scenarios. This course serves as an introduction to how relevant research from decision and social sciences can be applied to policy questions encountered by governments (intelligence and policy analysts) and private industry (business strategists and information officers). Topics of operations research, game theory, signal detection theory, and decision theory (heuristics and biases) will be discussed with respect to the application of these theories to improve the performance of individuals and groups within these organizations.

88-444 Public Policy and Regulations
Intermittent: 9 units
Regulations are critical in determining how our society works. How we decide to run our economy, take care of our health, and sustain our environment are all determined through regulations. Everything that you encounter on a daily basis has some regulation lurking behind the scenes. Trying to understand why things are the way they are without understanding the importance, functioning, and limits of regulatory policy is impossible. Despite their importance, regulations are not in the US Constitution. In fact, much to the dismay of some citizens, the "Administrative bureaucracy" that runs the regulatory process is often referred to as the fourth branch of government (on par with the other three: Legislative, Executive, and Judicial). This course will introduce a range of topics related regulatory policies and provide numerous case studies to motivate discussions and comprehension.

88-451 Policy Analysis Senior Project
Spring: 12 units
Students in this course apply the research and analytical methods learned in their other courses to a real-world problem. Students decide how to structure the problem, divide into teams responsible for its different parts, identify and analyze relevant literature, collect data, synthesize their results, and present their conclusions in oral and written form to a review panel of individuals concerned with the problem. Faculty members help them along the way. Performance is based on students' contribution to the process and substance of the class, as observed by the faculty and by their fellow students. One or two such projects is offered every term. A complete list of previous topics is available from the department. Course is open only to seniors in SDS.

88-452 Policy Analysis Senior Project
Fall: 12 units
Students in this course apply the research and analytical methods learned in their other courses to a real-world problem. Students decide how to structure the problem, divide into teams responsible for its different parts, identify and analyze relevant literature, collect data, synthesize their results, and present their conclusions in oral and written form to a review panel of individuals concerned with the problem. Faculty members help them along the way. Performance is based on students' contribution to the process and substance of the class, as observed by the faculty and by their fellow students. One or two such projects is offered every term. A complete list of previous topics is available from the department. Course is open only to seniors in SDS.

88-453 Behavioral Economics Capstone
Spring: 9 units
The Capstone in Behavioral Economics, Policy, and Organizations will work to apply the theories, concepts, and statistical techniques mastered in prior courses to an applied project. Students will work closely both in teams and individually with the instructor on a project that will address a problem posed by an organization or government that behavioral economics can help to solve. Students will work to structure the problem, design an intervention or study, collect and analyze the data, and make recommendations for implementation. Students will manage the project and drive interactions with the client organization.

88-454 Decision Science Capstone
Fall and Spring: 9 units
The Capstone in Decision Science is a seminar that applies the theories, concepts, and statistical techniques mastered in prior courses to an applied project. Students will work closely both in teams and individually with the instructor on a project that will address an applied problem that decision science can help to solve. Students will work to structure the problem, define a focused research question, design a study that addresses the question, collect and analyze the data, and make policy or practice recommendations based on the findings. Students will manage the project, drive the scientific question and approach, and make a formal presentation to a panel of experts.
Prerequisite: 88-302

88-499 Advanced Undergraduate Research
Fall and Spring
Students conduct research at an advanced level under the supervision of a Social and amp; Decision Sciences faculty member. Students who wish to engage in advanced research should seek out a faculty member whose interests are appropriate to the research. Students must also complete an "Independent Study/Research for Credit" form, available from the SDS Advisors in Porter 208A and 208G.

88-505 Undergraduate Internship
All Semesters
An internship is an approved and monitored work experience than can be related to an academic field of study through active reflection and specific learning goals. Students must work at least 10 hours per week for the semester at the internship. Additionally, students will also keep in regular contact with a faculty member in Social and Decision Sciences, who will assign and evaluate academic work. Internships are available for 1-9 units, depending on the type and amount of academic work produced. Students are responsible for finding their own internships and faculty sponsors, although assistance is available in the department. Students must also complete an "Internship Learning Agreement" form, available from the SDS Advisors in Porter 208H and 208G.