# 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.*

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**88-120 Reason, Passion and Cognition**

Fall and Spring: 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.

**88-130 Behavioral Economics for Life**

Fall: 9 units
Are we humans or econs? Econs are analytical, make rational judgments and decisions, are deliberate and patient, and are able to perfectly implement their plans. Humans, however, are influenced by emotions, have systematic biases in their judgment and decision-making, can be impulsive and lack self-control, and often struggle implementing their plans. College students (and professors) are humans and as such we sometimes procrastinate, eat poorly, don't get enough sleep, skip out on going to the gym, make money mistakes, feel lonely, misjudge others, inadvertently discriminate against others, engage in unnecessary conflict, and don't live up to our own ethical standards. This course teaches you the science of behavioral economics-how it developed and is evolving as a field and how it can help you to improve your life now during college and later in your professional life. You will learn about evidence-based behavioral strategies and how they can help you to be happier, healthier and wealthier. You will also have the opportunity to try some of these strategies yourself and reflect on whether to incorporate them into your daily routines.

**88-140 Introduction to Sociology**

Spring: 9 units
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**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, you will learn a powerful set of concepts for analyzing: (i) What markets are and the positive and negative effects they may have on individuals and society (ii) What democracy is, how markets and democracy may interact, and some ways in which democracy is vulnerable (iii) How public policy might soften some of the negative effects of markets and support democracy. You will learn theory via application to historical and current real-world examples. You will appreciate how theory illuminates the real-world examples.
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: 36-207 or 36-211 or 70-207 or 36-225 or 36-247 or 36-217 or 36-200 or 36-201 or 36-200

**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.

**88-234 Negotiation: International Focus**

Spring: 9 units
Most people think negotiation is all about strategies and tactics, that is what you do and say during a negotiation. However, negotiation is best understood by analyzing the contextual environment in which the negotiation takes place. This class focuses on negotiations that take place across international borders and examining how the features of the negotiation environment drive the negotiation process and ultimately the results. We will show how features such as the historical relationships between the parties, the constituents and political environment, the cultural norms, alternatives to a negotiated agreement, linkages to future negotiations with other countries, whether the negotiation takes place openly or behind closed doors, and the psychological process will influence the negotiating agents, process, and outcomes. Note that this framework can be applied to any negotiation situation to shed light on what transpired during a negotiation and how an agreement ultimately was or was not reached.

**88-235 Negotiation: Strategies and Behavioral Insights**

Fall: 9 units
Don't leave money on the table, become an effective negotiator! 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.

**88-237 The Happy Cyborg**

Intermittent: 9 units
How much of a cyborg do you want to be? What aspects of your mental life do you want to offload to technology, and which aspects do you want to keep for yourself? Who should get to decide the limits of individuals' control over their own cybernetic implants? What will happen if some groups of humans become more integrated with technology than others? As our lives become increasingly intertwined with technology, how can we ensure that these advancements enhance rather than diminish human happiness? What unintended consequences might emerge from attempting to maximize happiness through brain-computer interfaces? Students will explore the present, near future and far future of human-technology integration through in-class activities, student discussion, interactive projects and media drawn from science fiction, philosophy, psychology, neuroscience, human-computer interaction and futurism.

**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: 36-201 or 36-247 or 36-207 or 36-200

**88-252 Causal Inference: from Data to Decisions**

Fall: 9 units
Every day, you're bombarded with bold claims on social media and TV—flashy ads promising "miracle supplements" that "burn fat fast," or viral posts wielding suspicious bar graphs to sway your opinion ("Look at how crime spikes when immigration spikes!"). This course equips you with the analytical tools to see through the hype, evaluate the evidence, and distinguish genuine causal relationships from cleverly disguised BS. You will learn the methods economists use to study causal relationships, beginning with linear regression—the fundamental tool for identifying patterns—and progressing to advanced econometric techniques such as difference-in-differences, regression discontinuity designs, and instrumental variables. Through hands-on coding labs and a flipped classroom model, you will gain practical experience in data analysis while learning how to frame a research question, establish the criteria for causality, and interpret your findings with confidence. Later, you will critically evaluate the causal arguments in real research by critiquing studies and presenting your insights in a polished group report. This course is designed not only to teach you that "correlation is not causation" but also to show you why that is the case and when causal claims are justified.
Prerequisites: 36-202 or 36-309 or 70-208 or 85-309

**88-255 Strategic Decision Making**

Spring: 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 and Decision Making**

Fall: 9 units
Why does picking the right healthcare plan feel like a gamble-and how do you win? Why are two identical pills priced worlds apart? What guides a doctor's recommendation and #8212; science, or the invisible forces of economics and psychology? Why can't a tech-rich health system guarantee good health for all? Can a policy change really nudge a nation towards better health, or is that a fantasy? What are the market forces that drove Luigi Mangione to assasinate a health insurance executive? Join this course to tackle these puzzles, cutting through the complex maze of health decisions, cost disparities, and policy impacts (with a focus on the US). Debate, challenge, and uncover the forces molding healthcare. Ready for a deep dive into the mechanics of healthcare? This is your starting line.

**88-262 Rationality and Irrationality in Medicine**

Spring: 9 units
How do clinicians make decisions about what tests to order, what treatments to prescribe, and how to explain risks to patients? How do patients make decisions about whether to get vaccinated, whether to undergo cancer screening, and what end of life care they would want? Why do people engage in behavior that harms health (like smoking or unprotected sex) and fail to engage in behavior that enhances health (such as exercise or taking prescribed medication), and what can be done about that? This course uses the field of Decision Science to address these questions and by considering both rational and behavioral approaches to decision making by clinicians and patients.

**88-275 Bubbles: Data Science for Human Minds**

Spring: 9 units
No one is an island: from the casual interactions of day-to-day life to the global markets that supply us with the fruits of our technologies, the fabric of experience is woven out of interaction with other people. This course will introduce you to basic ideas in psychology, economics, and the social sciences that help us understand how this happens. We'll learn about both the mysterious inner world of human experience, and the equally strange and striking social phenomena that they lead to. We'll experiment on ourselves in class to discover unexpected aspects of our own unconscious, and how irrational even the best groups can be. Most importantly, we'll send you out into the world - the physical worlds of CMU and Pittsburgh, and the virtual ones onlineto conduct your own investigations. We know extraordinarily little about the "human animal", and the best way to learn is to go look for ourselves.
Prerequisites: 70-207 or 36-200

**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.

**88-285 Deconstructing and Dismantling Discrimination**

Fall: 9 units
Prejudice and discrimination produce and perpetuate inequitable social outcomes for individuals and groups. However, shifting attitudes does not always change behavior, nor do behavioral shifts always lead to broader social and policy change to bring about societal equity. So, how should we engage in the action needed to address systemic inequality? In this course, students will learn key theories from social psychology, behavioral economics and decision-making, and review research from those disciplines on prejudice and discrimination, including racism, sexism, and classism. With that foundation, students will critically assess policy effectiveness in domains where social inequality persists, including environmental and criminal justice, education, healthcare, housing, and wealth and income. Policies will be examined through readings, podcasts, discussions, and writing activities. In a peer-evaluated final group project, students will propose a policy solution to a specific issue, analyze its efficacy, and present a plan to gain public support for the policy.
Prerequisites: (88-120 or 85-102 or 85-241) and (76-101 or 76-108 or 76-107 or 76-102)

**88-290 Confessions, Lies, and Gossip**

Spring: 9 units
Human beings are social creatures, and sharing thoughts, feelings, and information with others is fundamental to the human experience. We engage in this type of disclosure frequently, often without conscious thought or deliberation. Yet the act of disclosing information is fraught with risk, particularly in the digital age where what we share can be widely accessed and permanently stored. This course aims to cast this ubiquitous act in a new light, investigating many of the behaviors we take for granted, and explaining common counter-normative and suboptimal phenomena, through different theoretical lenses. Why do people share information that they know might prove to be materially damaging or harmful to their reputation? Can gossiping be understood as a prosocial act, benefitting a common good? What types of information are most likely to "go viral"? This course attempts to answer these and many other questions, and to provide students with the perspective and tools necessary to improve their own disclosure decision making.
Prerequisites: 85-102 or 88-120

**88-299 Peer Research Mentoring for Reason, Passion, and Cognition**

Fall and Spring
Students enrolled in this course will serve as mentors for project groups in Reason, Passion, and Cognition. Each mentor will be assigned a number of student groups to work with.

**88-300 Programming and Data Analysis for Social Scientists**

Spring and Summer: 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: 36-201 or 36-200

**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 36-220 or 70-207 or 36-207 or 36-201 or 36-200 or 36-247 or 36-217 or 36-211) 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: 36-200 or 36-201 or 70-207

**88-323 Policy in a Global Economy 1: International Trade and Trade Policy**

Spring: 6 units
Across the globe, the longstanding consensus in favor of open trade and investment policies is being called into question. Trade wars are spreading and becoming more intense. Protectionism and industrial policies are being embraced by developed and developing countries alike. Are these shifts appropriate? Will they lead to greater prosperity or make prosperity harder to achieve? This course will give students the tools to answer these qustions. It will focus on the economics of international trade and immigration, providing students with the skills needed to assess trade, industrial, and immigration policies. We will also study the politics of trade and immigration and the roots of the current backlash against globalization. We will study the connection between trade and economic development. We will analyze the rise of trade wars, trade sanctions, and the growing connection between trade policy and considerations of national security. We will also examine policy options for mitigating the costs and more equally distributing the benefits of international trade. Finally, we will consider the implications of climate change for international trade and trade policy. The instructor, Professor Lee Branstetter, is the James Walton Professor of Economics and Public Policy at Carnegie Mellon University. He has served on the staff of President Obama's Council of Economic Advisers and as a consultant to the World Bank, the IMF, and Japan's Ministry of Economy, Trade, and Industry.

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

**88-324 Policy in a Global Economy 2: International Trade and Trade Policy**

Spring: 6 units
The global economic and financial landscape is far from tranquil and stable. National governments must frequently respond to macroeconomic and financial shocks generated elsewhere in the world. How can governments achieve and maintain growth and stability in a world where financial chaos seems ready to emerge at any moment from the most unlikely circumstances? How can nations learn the lessons of our turbulent financial and macroeconomic history, so that they are not doomed to repeat it? This course will address these essential questions. This course will teach students the basic conceptual frameworks and models of international macroecoomics. The class will focus on the rise of international capital and financial flows in the post-war era, international macroeconomic policy trade-offs with fixed and floating exchange rates, and the economics of inflation. We will use both economic models and detailed historical case studies to investigate currency and financial crises in developed and developing countries, and we will study the costs and benefits of Europe's single currency. The instructor, Professor Lee Branstetter, is the James Walton Professor of Economics and Public Policy at Carnegie Mellon University. He has served on the staff of President Obama's Council of Economic Advisers and as a consultant to the World Bank, the IMF, and Japan's Ministry of Economy, Trade, and Industry.

**88-341 Team Dynamics and Leadership**

Fall and Spring: 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: 70-207 or 36-207 or 36-247 or 36-217 or 36-200 or 36-201 or 36-225 or 36-220

**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**

Fall: 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.

**88-348 Behavioral Finance**

Intermittent: 9 units
Behavioral finance explores how psychological biases, emotions, and social influences impact financial decisions, often in ways that deviate from traditional financial theory. In this course, students will critically examine the rational frameworks of mainstream finance and the behavioral tendencies that shape investment behavior in the real world. By integrating these different perspectives, students will build a comprehensive understanding of dynamics in financial markets and develop the skills to analyze financial decisions in a variety of contexts from investing to regulation of the financial markets. Above all else, this course has the goal of giving students the tools to make better financial decisions in their personal and professional lives.
Prerequisite: 73-102

**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: (21-112 or 21-120) and (73-104 or 73-102 or 73-100 or 88-220)

**88-365 Behavioral Economics and Public Policy**

Spring: 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. We will then examine, and critique, an approach to public policy called "nudge." 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: 88-220 or 73-100 or 73-102

**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
Businesses and organizations—from tech companies to non-profits to governments—increasingly use experiments to learn what policies and practices to implement. Why are experiments so useful? How can we design experiments to learn what works best for companies, employees, customers, or citizens? This course is designed to help you understand the why and how of designing experiments to solve real-world problems. We'll focus on practical issues that arise at each stage of the process—from deciding the right question to ask, to ensuring you have the right kind and amount of data, to understanding what you can learn (and can't learn) from the results—illustrating each lesson by examining real-life experiments within organizations.
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**

Fall: 9 units
Business managers and public policymakers who make good decisions are in high demand and are richly rewarded. Increasingly, those decisions must be made in dynamic, data-rich environments. In those environments, having an extensive analytical toolkit and being able to build and use decision models are essential for success. Building on the foundations laid by prior coursework, we will cover advanced analytical topics from the decision sciences with an emphasis on model building. Topics may include 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 to build models. 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.
Prerequisites: (70-207 or 36-207 or 36-225 or 36-200) and (19-301 or 19-351 or 70-257 or 88-223)

**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.

**88-411 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 84-110 or 73-102 or 73-150 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.

**88-436 Human-AI Complementarity for Decision Making**

Spring: 9 units
Humans and AIs bring distinct strengths to decision-making in uncertain, dynamic, and complex environments. How can we design human-AI decision making systems that draw on the strengths of humans and AI technologies to remedy the limitations and weaknesses of each one in isolation and improve the quality of the resulting decisions? This course will explore the emerging science of human-AI decision-making, focusing on how humans and AIs can complement each other. The course will teach students to identify the conditions and criteria for human-AI complementarity, determine the major research gaps in prior research, and put forward an interdisciplinary research agenda to mitigate and address these gaps. The students in the course are expected to define and write down a concrete research proposal addressing one of the core topics of the course
Prerequisites: 10-315 or 10-301 or 15-281 or 07-180

**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**

Fall: 9 units
The Capstone in Behavioral Economics 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: 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.

**88-631 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.