INFORMATION SCIENCE (INFO)

INFO 1200 - Information Ethics, Law, and Policy (3 Credits)
Crosslisted with STS 1201
This course investigates the ethical, legal, and policy foundations of contemporary information technology. Through lectures, readings, discussions, and short assignments, we will address contemporary challenges ranging from the contests over intellectual property and privacy in a networked world to questions of inequality and control over technology. We will cover key areas of technology law and policy such as computing ethics; intellectual property; competition, antitrust, and freedom of expression; privacy and security; and AI ethics. We will also address new ethical questions and controversies that law and policy has yet to sort out. Through this course you'll learn about the key frameworks, processes, and institutions that govern the contemporary world of information technology, along with key theories and methods from academic fields that shape and inform them (law, philosophy, economics, political science, communication, sociology, etc.). You will also learn core reading and analytic skills central to success in the worlds of social science, law, policy, and many other settings. But above all you'll learn to engage critically and strategically with the worlds of information and technology around you, deciding what kind of information consumer, user, producer, and citizen you want to be.
Distribution Requirements: (ETH-AG), (SCT-IL)
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Spring 2020
Schedule of Classes (https://classes.cornell.edu/)

INFO 1260 - Choices and Consequences in Computing (3 Credits)
Crosslisted with CS 1340
Computing requires difficult choices that can have serious implications for real people. This course covers a range of ethical, societal, and policy implications of computing and information. It draws on recent developments in digital technology and their impact on society, situating these in the context of fundamental principles from computing, policy, ethics, and the social sciences. A particular emphasis will be placed on large areas in which advances in computing have consistently raised societal challenges: privacy of individual data; fairness in algorithmic decision-making; dissemination of online content; and accountability in the design of computing systems. As this is an area in which the pace of technological development raises new challenges on a regular basis, the broader goal of the course is to enable students to develop their own analyses of new situations as they emerge at the interface of computing and societal interests.
Distribution Requirements: (ETH-AG, KCM-AG, OPHLS-AG), (ETM-AS, SDS-AS), (STA-IL)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2022, Spring 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 1300 - Introductory Design and Programming for the Web (4 Credits)
This course is designed to introduce students to the conceptual, design, and technical aspects of developing front-end accessible websites. No prior knowledge of programming, or web design is assumed nor necessary. In the course, we will cover basic web technologies such as HyperText Markup Language (HTML), Cascading StyleSheets (CSS), and some JavaScript (JS). We will also cover theories and principles that will help you become a better UX designer. This includes information, visual, and interaction design principles; usability and user testing principles and processes.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Learning Outcomes:

- Develop competency in accessible client-side/front-end static web development.
- Use HTML to structure content (structural layer), CSS to style content (presentation layer), and JavaScript for client-side interactivity (behavioral layer).
- Implement client-side interactivity using JavaScript snippets to dynamically change the structural and presentation layers.
- Employ the user-centered design process to design static websites for a specific audience.
- Design and implement usable responsive websites for narrow and wide screen devices.
- Organize content and design usable navigation (information architecture).
- Design usable websites leveraging the visual design principles of color, contrast, typography, proximity, alignment, hierarchy, repetition and consistency.
- Troubleshoot programming problems independently using reference documentation and generative AI.
- Utilize generative AI tools effectively as a coding partner to assist in development.
- Gain experience with developer best practices, like version control using Git and authoring documentation using Markdown.
- Demonstrate a high standard of professionalism.

Schedule of Classes (https://classes.cornell.edu/)

INFO 1350 - Introduction to Cultural Analytics: Data, Computation, and Culture (3 Credits)
Crosslisted with AMST 1350, ENGL 1350
Last Four Terms Offered: Spring 2021, Spring 2020
Schedule of Classes (https://classes.cornell.edu/)

INFO 1380 - Data Science for All (4 Credits)
Crosslisted with STSCI 1380, CS 1380, ORIE 1380
This course provides an introduction to data science using the statistical programming language R. We focus on building skills in inferential thinking and computational thinking, guided by the practical questions we seek to answer from data sets arising in medicine, economics and other social sciences. The course starts with essential R programming principles, and how to use R for data manipulation, visualization, and sampling. These techniques are then used to summarize and visualize real data sets, draw meaningful conclusions from those data, and assess the uncertainty surrounding those conclusions. Throughout the process, students will learn to develop hypotheses about their data, and use simulations and statistical techniques to test these hypotheses. The course also covers how to use the Tidyverse open-source R packages to clean and organize complex data sets, and create high quality graphics for data visualization.
Distribution Requirements: (DLG-AG, OPHLS-AG), (SDS-AS), (STA-IL)
Last Four Terms Offered: Spring 2024, Spring 2023, Spring 2022, Winter 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 1998 - First-year Team Projects (1-3 Credits)
Independent work in information science as part of a student-led team project. Intended for first-year students on project teams, project team members in training, and for project team members performing tasks that are not core to information science.
Enrollment Information: Primarily for: first-year students.
Exploratory Studies: (CU-CEL, CU-UG)

Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 2040 - Networks (3 Credits)
Crosslisted with ECON 2040, SOC 2090, CS 2850
This interdisciplinary course examines network structures and how they matter in everyday life. The course examines how each of the computing, economic, sociological and natural worlds are connected and how the structure of these connections affects each of these worlds. Tools of graph theory and game theory are taught and then used to analyze networks. Topics covered include the web, the small world phenomenon, markets, neural networks, contagion, search and the evolution of networks.
Distribution Requirements: (OCE-IL, QP-IL), (SBA-AG), (SSC-AS)
Last Four Terms Offered: Summer 2025, Winter 2025, Fall 2024, Summer 2024
Schedule of Classes (https://classes.cornell.edu/)

INFO 2300 - Server-Side Web Development (4 Credits)
In this project-based course, students are introduced to the conceptual, design, and technical aspects of developing accessible server-side rendered websites. Students will learn how to respond to HTTP requests, dynamically render HTML, populate and store web content in a relational database using SQL, process web forms, and securely implement login/logout sessions through server-side programming. Through a succession of homeworks and projects, students learn and practice how to apply these principles to the creation of interactive and data-driven websites. Modern best practices are emphasized, including the use of version control, development containers, and generative AI.
Prerequisites: INFO 1300 and CS 1110 or CS 1112.
Last Four Terms Offered: Fall 2024, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Dynamically render web content (HTML) server-side using a programming language.
- Create and respond to HTTP requests between the client (browser) and web server.
- Populate and store web content in a relational database using SQL.
- Design and implement usable and accessible web forms.
- Implement HTTP state using cookies; implement login/logout sessions.
- Troubleshoot programming problems independently using reference documentation, debuggers, and generative AI.
- Utilize generative AI tools effectively as a coding partner to assist in development.
- Gain experience with developer best practices, like version control using Git and authoring documentation using Markdown.
- Demonstrate a high standard of professionalism.

Schedule of Classes (https://classes.cornell.edu/)

INFO 2310 - Interactive Web Development (4 Credits)
This course introduces students to the conceptual, design, and technical aspects of authoring client-side interactive web applications. Students will use the JavaScript programming language to author dynamic client-side interactive and accessible components, implement REST APIs, query data from a document database, and asynchronously request and render API data client-side. Through a succession of homeworks and projects, students will learn and practice how to apply these principles to the creation of client-side rendered websites. Modern best practices are emphasized, including the use of version control, development containers, and generative AI.
Prerequisites: CS 1110 or CS 1112 and INFO 1300.
Last Four Terms Offered: Spring 2025, Fall 2023
Learning Outcomes:

- Design usable and accessible client-side rendered components for interactive single-page web applications.
- Communicate between client and server side code via HTTP requests and responses.
- Store and retrieve web content in a document database.
- Design and implement usable RESTful APIs.
- Troubleshoot programming problems independently using reference documentation, debuggers, and generative AI.
- Utilize generative AI tools effectively as a coding partner to assist in development.
- Gain experience with developer best practices, like version control using Git and authoring documentation using Markdown.
- Demonstrate a high standard of professionalism.

Schedule of Classes (https://classes.cornell.edu/)

INFO 2450 - Communication and Technology (3 Credits)
Crosslisted with COMM 2450
Introduces students to the Communication and Information Technologies focus area of the communication department and the Human Systems track for information science. It examines several approaches to understanding technology and its role in human behavior and society. Topics include psychological aspects of computer-mediated communication; how design plays a role in the way we interface with technology and collaborate with each other; and the ways in which communication technology is situated inside social and institutional structures and cultural formations.
Distribution Requirements: (ETM-AS), (KCM-AG)
Last Four Terms Offered: Summer 2025, Fall 2024, Summer 2024, Fall 2023
Learning Outcomes:

- Students will be able to evaluate (both existing and hypothetical) communication technologies using principles of user-centered design.
- Students will be able to anticipate consequences of communication technology (both existing and hypothetical) on individual behavior and personal well-being.
- Students will be able to anticipate consequences of communication technology (both existing and hypothetical) on collective behavior and effectiveness.

Schedule of Classes (https://classes.cornell.edu/)

INFO 2750 - Robot Ethics (3 Credits)
Crosslisted with ECE 2750, STS 2751, ENGRG 2750
Last Four Terms Offered: Spring 2022, Fall 2020, Fall 2019, Fall 2018
Schedule of Classes (https://classes.cornell.edu/)

INFO 2770 - Excursions in Computational Sustainability (3 Credits)
Crosslisted with CS 2770, AEM 2770
Balancing environmental, economic, and societal needs for a sustainable future encompasses problems of unprecedented size and complexity. Computing and information science can play an important role in addressing critical sustainability challenges faced by present and future generations. The goal of the course is to introduce students to a range of sustainability challenges and to computational methods that can help address such challenges. Sustainability topics include sustainable development, biodiversity and wildlife conservation, poverty mitigation, food security, renewable resources, energy, transportation, and climate change. In the context of these sustainability topics, the course will introduce students to mathematical and computational modeling techniques, algorithms, and statistical methods. The course is at the introductory undergraduate level. Students are expected to have basic knowledge of probability theory and calculus.
Distribution Requirements: (SBA-AG)
Exploratory Studies: (CU-SBY)

Last Four Terms Offered: Spring 2024, Spring 2023, Spring 2021, Spring 2020
Learning Outcomes:

- Students will be able to identify notions of sustainability as they arise in ecology, geology, economics, and other biological, physical, and social sciences.
- Students will be able to mathematically interpret and calculate levels of sustainability.
- Students will learn how to problem solve techniques of sustainability via computational models, algorithms, and statistical methods.

Schedule of Classes (https://classes.cornell.edu/)

INFO 2921 - Inventing an Information Society (3 Credits)
Crosslisted with ENGRG 2980, HIST 2920, AMST 2980, STS 2921
Provides an introduction to the role computing and information technologies played in political public life, from tabulating machines used to calculate the census to Big Tech's impact on democratic procedures, the future of labor, and the environment. Though organized around four thematic units (Recognizing and Representing, Knowing, Working, and Belonging), the course pays attention to the chronological trajectory of technologies and political practices and students will develop the skills necessary for historical analysis. While focusing on the US experience the course also highlights the international flow of labor, materials, and ideas. By studying the development of computing historically, we will grapple with the effects of computing and data sciences on society today, paying special attention to critiques of economic, racial, and gender injustice. The course will meet twice a week, and each meeting will include a lecture followed by a discussion.
Distribution Requirements: (HA-AG), (HST-AS)
Last Four Terms Offered: Spring 2023, Fall 2021, Fall 2019, Fall 2017
Learning Outcomes:

- Knowledge of ethical issues regarding political representation, workplace compensation, and access to information technology.
- Ability to make sound arguments about major themes in the history of information technology. Ability to discuss these themes orally with the professor and other students.
- Understanding of the complex, mutual relationship between technological changes introduced by engineers and their embeddedness in larger political movements.
- An appreciation of how the ways we tell histories of technological innovation shape political outcomes and the ability to critically evaluate such historical narratives.

Schedule of Classes (https://classes.cornell.edu/)

INFO 2950 - Introduction to Data Science (4 Credits)
INFO 2950 is an applied introductory course on the foundations of data science, focusing on using data to identify patterns, evaluating the strength and significance of relationships, and generating predictions using data. Topics covered include the core principles of statistical programming (such as data frames, Python/R packages, reproducible workflows, and version control), univariate and multivariate statistical analysis of small and medium-size datasets, regression methods, hypothesis testing, probability models, basic supervised and unsupervised machine learning, data visualization, and network analysis. Students will learn how to use data to make effective arguments in a way that promotes the ethical usage of data. Students who complete the course will be able to produce meaningful, data-driven analyses of real-world problems and will be prepared to begin more advanced work in data-intensive domains.
Prerequisites: one course is core statistics (MATH 1710 or equivalent) and one course in core programming (CS 1110 or CS 1112) or permission of instructor.
Distribution Requirements: (DLG-AG, OPHLS-AG), (SDS-AS), (STA-IL)
Last Four Terms Offered: Fall 2024, Summer 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 2951 - Introduction to Data Science with R (4 Credits)
This is an applied introductory course for students who wish to harness growing digital and computational resources. The focus of the course is on using data to identify patterns, evaluate the strength and significance of relationships, and generate predictions using data, carrying students through the entire data science workflow from data collection to communication of results. These techniques are implemented using a reproducible workflow, programmatic techniques, and version control software. Students will learn how to use data to make effective arguments, in a way that promotes the ethical usage of data.
Prerequisites: CS 1110 or CS 1112 and one of the following courses: AEM 2100, BTRY 3010, CEE 3040, ECON 3110, ECON 3130, ENGRD 2700, ILRST 2100, MATH 1710, PSYCH 2500, PUBPOL 2100 , SOC 3010, STSCI 2100, STSCI 2150, STSCI 2200.
Last Four Terms Offered: Spring 2025
Learning Outcomes:

- Conduct exploratory data analysis through data wrangling and munging as well as visualizations and summary statistics.
- Identify patterns in data to make predictions or to identify associations between variables.
- Evaluate the strength of patterns using statistical and substantive significance.
- Implement data science workflows using common, reproducible methods and software tools.

Schedule of Classes (https://classes.cornell.edu/)

INFO 3130 - Data and the State: How Governments See People and Places (4 Credits)
Crosslisted with PUBPOL 2130
In order to regulate and govern, states must marshall data: the whos, whats, and wheres of a nation get rendered in records and statistics, at least approximately, and they tell us a lot about identity and values. In this course we will use Census data as a jumping-off point for an investigation of data practices of governance. Students will learn tools for geospatial data science in Python/Geopandas and will learn principles of mapping. Readings include selections from geography, anthropology, science and technology studies, and urban sociology.
Distribution Requirements: (MQR-HE, SBA-HE)
Last Four Terms Offered: Spring 2025
Learning Outcomes:

- Write code to curate, clean, analyze, and visualize spatial data.
- Gain an understanding of historical processes of classification and regulation.
- Implement a descriptive or predictive analysis using appropriate data and statistical and/or computational methods.
- Clearly communicate your process and results as a data narrative through visualizations, context, textual description, and oral presentation.
- Identify the limitations and potential biases in the data, data-generating processes, and tools and methods in addressing a research topic.

Schedule of Classes (https://classes.cornell.edu/)

INFO 3140 - Computational Psychology (3 Credits)
Crosslisted with PSYCH 3140, COGST 3140
This course states and motivates the observation that cognition is fundamentally a computational process and explores the implications of this idea. Students are introduced to a variety of conceptual tools for thinking about cognitive information processing, including statistical learning from experience and the use of patterns distilled from past experience in guiding future actions. They learn to apply these tools to gain understanding of perception, memory, motor control, language, action planning, problem solving, decision making, reasoning, intelligence, and creativity.Applications of the newly acquired computational cognitive science concepts and tools to ecological issues - in particular, the accelerating climate catastrophe - are discussed in this course on a regular basis.
Prerequisites: one course each in psychology and statistics, or permission of instructor.
Distribution Requirements: (ETM-AS), (KCM-AG)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 3152 - Introduction to Computer Game Design (4 Credits)
A project-based course in which programmers and designers collaborate to make a computer game. This course investigates the theory and practice of developing computer games from a blend of technical, aesthetic, and cultural perspectives. Technical aspects of game architecture include software engineering, artificial intelligence, game physics, computer graphics, and networking. Aesthetic and cultural aspects include art and modeling, sound and music, game balance, and player experience.
Prerequisites: Recommended prerequisite for programmers: CS 2110, or permission of instructor. Recommended prerequisite for designers: INFO 2450 and/or submission of art/design samples to instructor. Designers should have some background in either art or interface design. Corequisite: ENGRC 3152.
Distribution Requirements: (SMR-AS)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 3200 - Technology, Behavior and Society (3 Credits)
Crosslisted with COMM 3200
This course addresses the contemporary socio- technological challenges and debates about digital media and information technologies and their impact on society. It covers a broad spectrum of topics spanning digital technologies, social behaviors, and society. We will critically evaluate research evidence and its relevance to various social contexts and practices, diverse users and uses of social media, ethical and policy implications, trade-offs of potential solutions, and the impact of socio-technological shifts on individuals and communities. Our overarching goal is to challenge commonplace assumptions about these tools and phenomena; and to ask deeper questions about their profound impact on society.
Distribution Requirements: (CA-AG)
Last Four Terms Offered: Summer 2025, Spring 2025, Summer 2024, Spring 2024
Learning Outcomes:

- Analyze and critique the complex information society around them.
- Students will be able describe how the socio-economic and cultural environment is changing with economic environment are changing with the emergence of new media and digital technologies.
- Students will be able to identify, describe, and speak about pressing contemporary controversies around new media (e.g., privacy,relationships, expertise, content moderation.
- Students will be able to articulate their perspective on these issues, in relevant digital media formats.

Schedule of Classes (https://classes.cornell.edu/)

INFO 3300 - Visual Data Analytics for the Web (3 Credits)
Crosslisted with CS 3300
This course will cover technologies for representing, modeling and displaying data in the context of interactive web pages. Practical skills for building web pages will be mixed with data mining algorithms and visualization design theory. We will use the D3 Javascript library to develop both static and dynamic visualizations, learn more about programming in Javascript, and explore web scalable vector graphics (SVG). Through design critique and formal study, we will identify the techniques visualization developers employ to create the right visualization for a given use case.
Prerequisites: CS 2110/ENGRD 2110 and INFO 2310 or permission of instructor.
Distribution Requirements: (DLG-AG, OPHLS-AG), (SDS-AS)
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 3312 - Data Communication (3 Credits)
Data scientists often present information to disseminate their findings. This course introduces theories and applications of communicating with data, with an emphasis on visualizations. To support this approach, we will focus on the what, why, and how of data visualization. What focuses on specific types of visualizations for a particular purpose, as well as tools for constructing these plots. In how we will focus on the process of generating a data visualization from pre-processing the raw data, mapping attributes of the data to plot aesthetics, strategically determining how to define the visual encoding of the data for maximal accessibility, and finalizing the visualization to consider the importance of visual appeal. In why we discuss the theory tying together the how and the what, and consider empirical evidence of best-practices in data communication.
Prerequisites: INFO 2950 or INFO 2951.
Distribution Requirements: (DLG-AG, OPHLS-AG), (SDS-AS)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023
Learning Outcomes:

- Implement principles of designing and creating effective data visualizations.
- Evaluate, critique, and improve upon one's own and others' data visualizations based on how good a job the visualization does for communicating a message clearly and correctly.
- Post-process and refine plots for effective communication.
- Master using R and a variety of modern data visualization packages to reproducibly create data visualizations.

Schedule of Classes (https://classes.cornell.edu/)

INFO 3350 - Text Mining History and Literature (3 Credits)
The class will introduce methods for computer-assisted analysis of historical and literary text collections. It will cover corpus curation, representing text as data, building statistical models from text, and interpreting quantitative results. The class will also reflect on how computational methods fit with existing practices in the humanities, and how we can use models as complements to our own interpretations. Following the course, students will be able to assist faculty in quantitative and computational humanities scholarship.
Prerequisites: INFO 2950.
Enrollment Information: Primarily for: students with programming and data science experience, or permission of instructor required.
Distribution Requirements: (OPHLS-AG), (SDS-AS)
Last Four Terms Offered: Fall 2024, Fall 2023, Spring 2022, Fall 2020
Learning Outcomes:

- Describe and evaluate major existing results in quantitative humanities research.
- Recognize, explain, evaluate, and implement standard techniques for the use of text as data.
- Create reliable, compelling, data-driven humanities research reports that apply suitable text-mining methods to existing humanities questions.
- Identify and analyze historical, ethical, and epistemic limitations of existing and potential textual corpora.
- For graduate students: Evaluate and adapt text-mining methods to current research problems relevant to the student's work.
- For graduate students: Analyze, evaluate, and present current research findings in computational text analysis.

Schedule of Classes (https://classes.cornell.edu/)

INFO 3370 - Studying Social Inequality Using Data Science (3 Credits)
Inequality is high in American society. Income and wealth are concentrated in far fewer hands than in other industrialized countries. Labor market outcomes are patterned by disparities across lines of race, gender, and class. This course will introduce social science theories about the origins of inequality, emphasizing how inequality is transmitted over time and across generations. Building on these theories, students will deploy tools for data science to visualize inequality, understand inequality, and evaluate hypothetical policy interventions that might reduce inequality. We will use the R programming language. A theme of the course is that applied work in this area can give rise to new data science tools, which may help solve some of society's most pressing challenges.
Prerequisites: INFO 2950 or equivalent.
Distribution Requirements: (SCD-AS)
Last Four Terms Offered: Spring 2024, Spring 2023
Learning Outcomes:

- Visualize economic inequality with graphs that summarize survey data.
- Connect theories about inequality to quantitative empirical evidence.
- Evaluate the effects of hypothetical interventions to reduce inequality.
- Conduct data analysis using the R programming language.

Schedule of Classes (https://classes.cornell.edu/)

INFO 3450 - Human-Computer Interaction Design (3 Credits)
Crosslisted with COMM 3450
This course focuses on user experience design (UX) and the life cycle of interface design from the user perspective. We will discuss key aspects of the human-centered design process: understanding, analyzing, and formalizing user needs, exploring possible design solutions to address user needs, creating prototypes to externalize design ideas, and evaluating the usability of these prototypes.
Last Four Terms Offered: Summer 2025, Fall 2024, Spring 2024, Fall 2023
Learning Outcomes:

- Students will be able to appraise the human-centered design cycle and human-computer interaction design concepts.
- Students will be able to build practical skills required to apply the human-centered design process in technology design through class activities and a semester-long project.
- Students will be able to design a user interface in a semester-long project, including interim milestones that walk the students through the specific stages of the design process.
- Students will be able to develop teamwork skills through a semester-long group project.

Schedule of Classes (https://classes.cornell.edu/)

INFO 3561 - Computing Cultures (4 Credits)
Crosslisted with STS 3561, VISST 3560, COMM 3560, ANTHR 3061
Last Four Terms Offered: Spring 2021, Spring 2020, Spring 2019, Spring 2018
Schedule of Classes (https://classes.cornell.edu/)

INFO 3660 - History and Theory of Digital Art (3 Credits)
Crosslisted with ARTH 3650, VISST 3650, STS 3650
In this course, we will examine the role of electronic and digital technologies in the arts of the late 20th and 21st centuries with emphasis on Europe and North America. Beginning with the cybernetically and systems-inspired work of the late sixties, we will explore early uses of computer technology, including early experiments in synthetic video in the 1970s. An overview of pre-internet telematic experiments will lead to an investigation of net art and later currents of digital art. The ongoing development of behavioral art forms will be a central theme. Critical evaluation of various attitudes concerning technology will be encouraged.
Distribution Requirements: (ALC-AS), (CA-AG, LA-AG)
Exploratory Studies: (EUAREA)

Last Four Terms Offered: Fall 2024, Fall 2022, Fall 2021, Fall 2020
Schedule of Classes (https://classes.cornell.edu/)

INFO 3900 - Causal Inference (3 Credits)
Crosslisted with STSCI 3900, ILRST 3900
Causal claims are essential in both science and policy. Would a new experimental drug improve disease survival? Would a new advertisement cause higher sales? Would a person's income be higher if they finished college? These questions involve counterfactuals: outcomes that would be realized if a treatment were assigned differently. This course will define counterfactuals mathematically, formalize conceptual assumptions that link empirical evidence to causal conclusions, and engage with statistical methods for estimation. Students will enter the course with knowledge of statistical inference: how to assess if a variable is associated with an outcome. Students will emerge from the course with knowledge of causal inference: how to assess whether an intervention to change that input would lead to a change in the outcome.
Prerequisites: STSCI 2100 or PSYCH 2500 or SOC 3010 or ECON 3110 or equivalent.
Distribution Requirements: (DLS-AG), (ICE-IL, STA-IL)
Last Four Terms Offered: Fall 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 3950 - Data Analytics for Information Science (3 Credits)
This course will cover intermediate-level applications of data science, with focus on discovery, interpretation, and communication of meaningful patterns in data. Topics will include regression, classification, clustering, and forecasting, with an overview of machine learning algorithms and statistical inference. Lectures and problem sets will make extensive use of python programming.
Prerequisites: INFO 2950 or INFO 2951 or equivalent.
Distribution Requirements: (DLS-AG)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 4100 - Learning Analytics (3 Credits)
Technology has transformed how people teach and learn today. It also offers unprecedented insight into the mechanics of learning by collecting detailed interaction and performance data, such as in online courses and learning management systems like Canvas. At the intersection of education and data science, learning analytics are used to make sense of these data and use them to improve teaching and learning. This course blends learning theories and methodologies covering a wide range of topics with weekly hands-on activities and group projects using real-world educational datasets. You will learn how learning works, major theories in the learning sciences, and data science methods. Students collect and analyze their own learning trace data as part of the course. Learning outcomes: Students will learn to articulate key ideas in the learning sciences; articulate the potential benefits and dangers of learning analytics for students, teachers, and institutions; choose and apply appropriate methods for analyzing different kinds of educational data and be able to articulate why; and interpret the results of basic learning analytics.
Prerequisites: INFO 2950 or equivalent, AEM 2100, CS 1110.
Distribution Requirements: (DLG-AG, SBA-AG), (SDS-AS)
Last Four Terms Offered: Spring 2025, Spring 2024, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 4113 - Technology and Law Colloquium (3 Credits)
This course explores new developments at the intersection of law and information technology. The class is structured as a series of dialogues with a diverse group of scholars - professors, practitioners, journalists, and others -- investigating how law and new technologies interact with and shape one another across many different domains. Students will be exposed to innovative research about technology policy, privacy, platforms, law enforcement, the nature of expertise, and the changing nature of legal and technical practice. The class will include both a public lecture component and a smaller group discussion.
Last Four Terms Offered: Fall 2021, Fall 2018
Schedule of Classes (https://classes.cornell.edu/)

INFO 4120 - Ubiquitous Computing (3 Credits)
This course will introduce students to the field of Ubiquitous Computing - a multidisciplinary research area that draws from Machine Learning, Machine Perception, Signal Processing, Human Computer Interaction, as well as psychology and sociology. Class discussions and hands on exercises will be the focus of this class with a few formal lectures. Discussions will highlight the various challenges in data collection, representation and tractability of models, and evaluation. We will brainstorm ideas on how future research can go about tackling some of these challenges. Students will be required to lead and critique papers. Everyone will take turns presenting papers and leading discussions. Participation in discussions will be evaluated as well as mini projects assignments during the term and an end of term final project.
Prerequisites: CS 1112 or equivalent.
Enrollment Information: Enrollment primarily for: juniors, seniors, and first-year graduate students.
Last Four Terms Offered: Spring 2025, Fall 2021, Fall 2019, Fall 2018
Schedule of Classes (https://classes.cornell.edu/)

INFO 4125 - Project Management (3 Credits)
This introductory course will emphasize the interpersonal skills necessary by project teams to manage demanding industry projects. Through a semester long simulated IS project, students will develop and apply a range of skills including time management, effective conflict resolution, negotiation, risk management, change control, and appropriate goal setting to adequately manage and execute their projects. Students will work in teams to engage in the 5 phases of the project management life cycle which includes: project initiation, planning, execution, monitoring, and project closure.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022
Learning Outcomes:

- Define industry project management lingo and terms.
- Use a range of project management skills such as time management, self- management, risk management and conflict resolution to solve a complex multi-faced Information Science (IS) project.
- Systematically apply the 5 phases of the Project Management (PM) life cycle to solve a simulated IS project.
- Collaborate in teams to cohesively execute and manage an IS software project.
- Devise strategies to address teaming challenges and create more inclusive IS teaming experience.
- Establish a team contract stipulating the team's acceptable modes of conduct.
- Reflect on how prior diverse (racial, cultural, ethnic etc.) project team experiences affect our understanding of project management best practices.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4140 - Law, Policy, and Politics of Cybersecurity (3 Credits)
This course explores selected topics in the law, policy, and politics of cybersecurity. Of specific interest will be a historical understanding of the development of the internet and how that history laid the foundation for the insecurity of products, services, and internet users' experience. Using a four-factor approach: law, market, social norms, and technology, we will explore the global landscape and its implications for situating cybersecurity in international law and global internet governance. The focus of the course will be on the United States, however, and will include topics such as the federal government's approach to cybersecurity, the National Cybersecurity Strategy, information security and risk management, types of cyberattacks and case studies, national defense generally and global internet governance.
Exploratory Studies: (CU-ITL)

Learning Outcomes:

- Define and scope cybersecurity and the history of insecurity products and use of information technology resources.
- Identify three security threats: individuals; organized crime; national states.
- Review legal remedies to software and security threats.
- Describe U.S. government cybersecurity organization and structure.
- Discuss U.S. government defensive and offensive approaches to cyber threats.
- Demonstrate a working command of zero-day exploits.
- Explain the balance of information security and risk management in corporate organizations.
- Define the relationship of cybersecurity and mis/disinformation campaigns.
- Formulate a cybersecurity framework for national security and the global context.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4145 - Privacy and Security in the Data Economy (3 Credits)
Increasingly, social and economic interactions are mediated by online platforms and algorithmic systems that rely on ubiquitous connectivity and data accumulation for their operation. While these systems have brought an unprecedented number of new products and services that have fostered growth and innovation, they have also created novel challenges to privacy and data security. In this course, we explore privacy and data security as multi-faceted concepts with economic, legal, social, ethical, and psychological underpinnings.
Distribution Requirements: (ETH-AG, SBA-AG), (SSC-AS)
Last Four Terms Offered: Fall 2024, Fall 2022
Learning Outcomes:

- Identify the tradeoffs involved in decisions to protect or to disclose personal information.
- Understand information security not only as a technical problem, but a problem of competing incentives from multiple stakeholders.
- Relate economic and behavioral theories with privacy and security decisions.
- Analyze emerging privacy and security trends as a multi-faceted problem with technical and social dimensions.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4152 - Advanced Topics in Computer Game Design (3 Credits)
Project-based follow-up course to INFO 3152. Students work in a multidisciplinary team to develop a game that incorporates innovative game mechanics. Advanced topics include nontraditional input schemes, advanced storytelling, social gameplay, and serious games. There is a special emphasis on developing games that can be submitted to festivals and competitions, or that can be commercialized.
Prerequisites: Prerequisite for programmers: INFO 3152, CS 3300/ INFO 3300 or CS 4620 or CS 3700 or CS 5414, or permission of the instructor. Prerequisite for designers: INFO 3152 and INFO 3450, or permission of the instructor. Corequisite: ENGRC 4152.
Distribution Requirements: (SMR-AS)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 4200 - Information Policy: Applied Research and Analysis (3 Credits)
Crosslisted with STS 4200, COMM 4201
This course will address a wide range of information policy issues such as privacy, security, antitrust, intellectual property, algorithmic fairness, net neutrality, risk mitigation strategies, and other legal and policy compliance concerns in a simulated project management environment. Patterned on life cycle project management for products and services in contemporary large-scale technology companies, students will adopt specific topic areas for applied research and analysis working dynamically with other team members. Course outcomes include conducting upper-level research in specific information policy domains, experiential group dynamics, persuasive analytic presentations, fundamentals of project management in the technology sector, and insights into corporate hierarchies, organization, and functionalities.
Prerequisites: INFO 1200 or INFO 1260, or permission of instructor.
Last Four Terms Offered: Spring 2022, Spring 2021, Fall 2013, Spring 2013
Schedule of Classes (https://classes.cornell.edu/)

INFO 4210 - Artificial Intelligence: Law, Ethics, and Politics (3 Credits)
Crosslisted with PUBPOL 4210
In the coming decades machine intelligence will transform the economy, society, and global politics. This course will study these processes and the political challenges to the development of beneficial AI. Topics will include problems in AI safety; effects on- and of inequality and technological unemployment; the strategic and tactical impacts of autonomous weapons, cyberweapons, and AI-enabled intelligence operations; global institutions for providing global public goods, the legitimate aggregation of preferences, and the beneficial governance of AI development.
Last Four Terms Offered: Spring 2023
Learning Outcomes:

- To become familiar with the arguments and methods deployed in the readings.
- To practice our critical analysis, so that we can better identify weaknesses in the theory, methods, or empirics of other research, including our own.
- To inspire new ideas and research directions.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4220 - Networks II: Market Design (3 Credits)
Crosslisted with CS 4852, ECON 3825
Networks II builds on its prerequisite course and continues to examine how each of the computing, economic, sociological and natural worlds are connected and how the structure of these connections affects these worlds. In this course, we will construct mathematical models for and analyze networked settings, allowing us to both make predictions about behavior in such systems, as well as reason about how to design such systems to exhibit some desirable behavior. Throughout, we will draw on real-world examples such as social networks, peer-to-peer filesharing, Internet markets, and crowdsourcing, that illustrate these phenomena.
Prerequisites: INFO 2040, CS 2800 or equivalent.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 4240 - Designing Technology for Social Impact (4 Credits)
Crosslisted with STS 4240
The social impact of technologies is typically thought about fairly late, if ever, in the design process. Indeed, it can be difficult at design time to predict what effects technologies will have. Nevertheless, design decisions can inadvertently lock in particular values early on. In this course, we will draw on science & technology studies, technology design, and the arts to analyze the values embodied in technology design and to design technologies to promote positive social impact. What social and cultural values do technology designs consciously or unconsciously promote? To what degree can social impact be built into a technology? How can we take social and cultural values into account in design?
Distribution Requirements: (SBA-AG), (SCT-IL), (SSC-AS)
Exploratory Studies: (CU-SBY)

Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 4250 - Surveillance and Privacy (3 Credits)
This course explores the social, legal, and ethical facets of surveillance in modern life. New information technologies facilitate data collection at unprecedented scales and reaching across multiple domains. We explore the history and theory of data collection for purposes of social and political control, and how privacy is conceptualized and deployed in response to surveillant systems. We discuss how surveillance and privacy are situated in law and culture; the emergence of surveillance in law enforcement, workplaces, institutions, families, and self-tracking contexts; and the relationships among surveillance, power, and marginalization of vulnerable groups. We consider avenues through which surveillance is resisted, including technological and policy-based design strategies to mitigate the effects of data collection.
Prerequisites: INFO 1200 or permission of instructor.
Last Four Terms Offered: Spring 2025, Spring 2023, Fall 2021, Fall 2019
Schedule of Classes (https://classes.cornell.edu/)

INFO 4260 - Computing On Earth: Planetary Dimensions and Consequence of Computing (3 Credits)
Crosslisted with STS 4260
This experimental, collaborative and seminar-based class will explore the material ethics of computing - the ways in which computing rests upon, emerges from, and ultimately returns to the earth, with deep and sometimes negative implications for sustainability, equity and justice in a rapidly changing world. Drawing on journalistic sources and academic fields ranging from anthropology, philosophy, public policy and environmental ethics to law, science and technology studies and human-computer interaction, the course will examine problems of computing-related sourcing and extraction, energy and consumption, and waste and repair, and how these are distributed and experienced in vastly different ways by different social groups and actors. Cases and examples will be drawn from near-to-hand and around the world.
Prerequisites: INFO 1200 or INFO 1260 or CS 1340 or permission of instructor.
Distribution Requirements: (SCH-AG)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023
Learning Outcomes:

- Explain and critically assess the material foundations and implications of computing, including as these relate to locations and communities around the world.
- Examine and explain your own values and policy preferences around the material ethics of computing, and offer reasoned arguments to support them (including in dialogue with the potentially differing positions of others).
- Discuss and appraise the key institutional, regulatory, and legal processes shaping questions of computing and sustainability in the U.S. and in other jurisdictions.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4300 - Language and Information (3 Credits)
Crosslisted with CS 4300
How to make sense of the vast amounts of information available online, and how to relate it and to the social context in which it appears? This course introduces basic tools for retrieving and analyzing unstructured textual information from the web and social media. Applications include information retrieval (with human feedback), sentiment analysis, and social analysis of text. The coursework will include programming projects that play on the interaction between knowledge and social factors.
Prerequisites: 1) Linear algebra: strong performance in MATH 2940 or equivalent; 2) Discrete math: strong performance in CS 2800 or equivalent. Note: The linear algebra and discrete math requirements can also be fulfilled with a strong performance in INFO 2950; and 3) Programming proficiency: CS 2110 or equivalent with strong Python skills and familiarity with IPython Notebooks, or permission of instructor.
Distribution Requirements: (OPHLS-AG), (SDS-AS)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 4301 - Ethics in New Media, Technology, and Communication (3 Credits)
Crosslisted with COMM 4300
This course examines moral and ethical issues in communication, new media, and technology. Using theories and research in moral philosophy and psychology, we examine how people perceive and reason about ethical issues presented by media and technology, and how moral action is influenced by cognitive, emotional, and ethical belief systems. Issues of autonomy, transparency, harm, privacy, manipulation, justice, democracy, equality, and care are discussed. We analyze the consistency between personal and professional ethics, the importance of moral character and agency, and the translation of moral thought to ethical action, and address the development of professional and personal ethical codes of conduct and research for communication professionals in the areas of new media and technology.
Distribution Requirements: (CA-AG, ETH-AG)
Last Four Terms Offered: Summer 2025, Winter 2025, Fall 2024, Summer 2024
Learning Outcomes:

- Students will be able to increase awareness of moral and ethical issues in media, technology, and communication.
- Students will be able to explain moral psychology and ethical principles.
- Students will be able to examine moral reasoning and ethical responsibilities-both personal and professional-that affect people and society.
- Students will be able to examine issues and implications of ethical relativism and ethical principles.
- Students will be able to reason thoughtfully and ethically about current cases and news items in communication, media, and technology.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4310 - Interactive Information Visualization (3 Credits)
This course explores a variety of techniques for making appealing and convincing representations of digital data. Students will build a toolbox of techniques for representing information, explore ways for making visualizations interactive, investigate how cognition makes data easy or hard to understand, and use their web development and data-scraping abilities to construct new visualizations. Projects centered around current issues will allow students to make use of their new knowledge both individually and in groups, and in-class critique sessions will refine their understanding of what makes for successful and unsuccessful designs.
Prerequisites: INFO 3300/CS 3300 or INFO 5100 or permission of instructor.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 4320 - Introduction to Rapid Prototyping and Physical Computing (4 Credits)
This class provides an introduction to modern rapid prototyping techniques such as laser cutting, 3D printing and microcontroller programming (such as the Arduino system). Using these tools, small multidisciplinary groups conduct the hardware project of their choice exploring topics as varied as: Universal Access, tangible interfaces, toys, personal or medical assistants and new musical instruments.
Prerequisites: INFO 2300 or INFO 2310.
Course Fee: Course Fee, $300. Course fee.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 4340 - App Design and Prototyping (3 Credits)
In this interactive studio-based course, students will gain practical experience independently creating high-fidelity prototype apps. This course has a significant software development focus, exposing students to software development methods and tools necessary for developing interactive software prototype applications. This includes employing UI component libraries, event-based programming, generative AI, basic command line usage, and debugging. Learning how to solve technical problems and use unfamiliar technology independently is emphasized; students should not expect step-by-step lectures or instructions for authoring their prototypes. Proficiency in dynamic client and server-side web programming is assumed.
Prerequisites: INFO 2310.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Fall 2022
Learning Outcomes:
- Design and implement high-fidelity prototypes of interactive software applications independently.
- Leverage the language of user interfaces to design interfaces that engage in a conversation with users.
- Independently approach technical problems and use unfamiliar technology you haven't been directly "taught".
- Explore unfamiliar code and technology as a strategy for building working prototypes.
- Effectively utilize generative AI to assist in the design and development of prototype apps.
- Demonstrate a high standard of professionalism and development best practices.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4350 - Conversations and Information (3 Credits)
As conversations become central to the way in which we acquire and consume information and as the societal implications became evident (e.g., potential for misinformation, hate speech, ethical questions surrounding the use of chatbots), there is an increasing need for automated ways to analyze their quality. This course will cover computational approaches to conversational analysis: starting from topics that were traditionally addressed within the Sociology subfield of Conversational Analysis, continuing with reviewing existing computational methods that address those topics, and further guiding the development of new methods and their application to real-life conversational data. In addition to lecturing in-class activities will include close interaction with conversational data, such as collaborative annotation of conversational phenomen, in-depth discussion of hand-picked examples, as well as joint and iterative development of annotation guidelines that lend themselves for computational modeling.
Prerequisites: INFO 4300 or CS 4300, MATH 2940 or equivalent, CS 2800 or equivalent and CS 2110 or equivalent.
Last Four Terms Offered: Fall 2023
Learning Outcomes:
- The students will be able to identify and characterize conversational phenomena.
- The students will be able to analyze and annotate conversational data.
- The students will be able to analyze conversations using computational techniques.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4360 - Communication Networks and Social Capital (3 Credits)
Crosslisted with COMM 4360
Course covers the relationship between communication networks and social capital and explores the tension between individual and group capital.
Prerequisites: COMM 2450/INFO 2450 or INFO 2040.
Distribution Requirements: (CA-AG)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Fall 2021
Learning Outcomes:
- Students will be able to gain the ability to explain situations in network terms, as well as improve in their ability to evaluate claims made in quantitative network studies. This will be achieved through reading and discussion of social scientific research papers with attention to a) whether knowledge claims are justified by the data analysis presented, and b) ways to reconcile competing claims made in different papers. Students will learn to apply their ability to recognize network-related situations and evaluate factual claims by applying these skills to analysis of scenario documents (see #2).
- Students will be able to improve their ability to do independent research about and to apply critical, theoretical thinking to both real and hypothetical scenarios. This will be achieved through the identification of scenarios where networks and social capital are relevant. Students will be asked to identify scenarios - including news articles.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4390 - Practical Principles for Designing Fair Algorithms (3 Credits)
Algorithms increasingly guide high-stakes decision-making across many domains. This has potential upsides, since algorithms can improve decision-making, but also serious risks, since recent years have showcased the many ways that algorithms can be biased.
This course will teach you principles for designing fair algorithms, emphasizing accessibility to a broad audience via practical takeaways which are directly relevant to the real world through case studies and guest speakers. Case studies will be drawn from diverse settings where algorithms are applied, such as large language models, speech recognition systems, healthcare, criminal justice, sustainability, and education. Students will come away with a strong understanding of how algorithm-related choices can have widespread societal impact.
Distribution Requirements: (DLG-AG, ETH-AG)
Last Four Terms Offered: Spring 2024
Schedule of Classes (https://classes.cornell.edu/)

INFO 4400 - Qualitative User Research and Design Methods (3 Credits)
Crosslisted with COMM 4400
This upper-level course provides an in-depth understanding of and experience with advanced concepts and techniques for researching, ideating, critiquing, designing, prototyping, and evaluating interactive technologies intended for people to use and incorporate in their lives. The course focuses on advanced user research and design methods.
Prerequisites: INFO 3450/COMM 3450/INFO 5355 or DEA 2730 or permission of instructor.
Distribution Requirements: (DLG-AG)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Students will be able to develop in-depth understanding of human-computer interaction theory, design, and research through readings, class discussions, and weekly workshops.
- Students will be able to develop skills needed to carry out design and evaluation of technologies from a human perspective through short assignments, class exercises, workshops, and semester-long project.
- Students will be able to develop teamwork skills through a semester-long group project.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4410 - Re-Designing Robots (3 Credits)
Crosslisted with CS 4754
"Re-Designing Robots" is a studio-based graduate course focused on building and deploying robots in real-world settings such as homes, workplaces, and public spaces. Students will work individually and collaboratively in interdisciplinary teams, incorporating perspectives from engineering, computer science, art, design, and social sciences. The course emphasizes critical examination of the societal roles and ethical implications of robotic technologies, encouraging students to ask not just how robots can function better, but how they can meaningfully and responsibly enhance human activities. Key topics include prototyping interactive robotic systems, video interaction analysis, and hands-on experimentation with physical robot prototypes. Through immersive, hands-on projects, students will develop the expertise to thoughtfully design robots that integrate seamlessly and responsibly into everyday life.
Enrollment Information: Enrollment is by instructor permission only and is for Masters and Undergraduate students only.
Course Fee: Course Fee, $ 200.00. For equipment.
Last Four Terms Offered: Spring 2025, Fall 2021, Spring 2019, Spring 2017
Schedule of Classes (https://classes.cornell.edu/)

INFO 4420 - Human Computer Interaction Studio (4 Credits)
This course will introduce User Experience design technique taught in a Studio. Students will work on a series of design studies and a semester long design project exploring advanced User Interaction design techniques. The course is designed to help students start a design portfolio to reflect their work. Students will be expected to buy small art supplies.
Prerequisites: INFO 3450 or equivalent.
Last Four Terms Offered: Fall 2024, Spring 2024, Fall 2023, Fall 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 4430 - Teams and Technology (3 Credits)
This course provides practical, experiential training designed to enhance students' teamwork and team-leadership skills through hands-on activities, reflection, and collaborative discussions. Recognizing that technology fundamentally shapes how we collaborate, students will explore how to effectively use technological tools—such as remote collaboration platforms, virtual meeting applications, and novel AI tools—to enhance team interactions and productivity. Each session includes interactive tasks aimed at building critical interpersonal skills, including managing group dynamics, resolving conflicts, improving communication, facilitating decision-making processes, and developing leadership strategies in technologically supported environments. Students will regularly reflect on their personal experiences and collaboratively assess how different technologies influence teamwork and collaboration. Grounded in insights from organizational behavior, social psychology, and human-computer interaction, the course emphasizes the practical application of skills essential for navigating and leading teams effectively. Upon completion, students will be equipped with concrete strategies and confidence to build and lead effective teams.
Course Fee: Course Fee, $ 50.00. Students are expected to budget up to $50 for course materials such as case studies and simulation exercises.
Last Four Terms Offered: Fall 2024, Fall 2023, Spring 2022, Fall 2020
Schedule of Classes (https://classes.cornell.edu/)

INFO 4450 - Computer-Mediated Communication (3 Credits)
Crosslisted with COMM 4450
Focuses on reading and evaluating the theories and research methodologies used to investigate communication via computer systems. Assignments include student collaborations using electronic conferencing and other advanced communication technologies, as well as reflections on and evaluations of these collaborations in light of current theories and research findings. Topics include virtual teams, videoconferencing, and others as they emerge.
Distribution Requirements: (SBA-AG)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Students will gain a theoretical understanding of the field of CMC and become familiar with both common and novel CMC tools,though readings and in depth class discussion of key articles in the field.
- Students will gain an understanding of how CMC researchers conduct their research, though a series of mini projects that require them to examine CMC phenomena and write short reports on them.
- Students will gain an in depth understanding of a selected area of CMC, through their team project and class presentation.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4490 - Social Behavior and Technology (3 Credits)
Crosslisted with COMM 4490
This course explores personal connections in the digital age, and how information and communication technologies impact our lives and relationships. It focuses on how people manage interactions and identities, develop and maintain relationships, accomplish social goals, create shared meanings, and engage in collaboration and conflict in social media. Emphasis will be placed on how current thinking in relational communication can explain and anticipate interpersonal dynamics on the Internet, but also on how online behaviors may challenge traditional principles of human communication. A major part of the course is a semester-long research project in which students working in small groups design, run, and present their own empirical study of personal relationships and technology.
Prerequisites: COMM 2820, COMM 2450 and INFO 2450.
Distribution Requirements: (SBA-AG)
Last Four Terms Offered: Spring 2022, Spring 2021, Spring 2020, Spring 2019
Learning Outcomes:

- Students will be able to examine and extend basic principles of interpersonal communication to human behavior and relationships on the Internet.
- Students will be able to explore the nature and role of perception of self and others in computer-mediated interactions.
- Students will be able to investigate how interpersonal relationships are affected by information and communication technologies.
- Students will be able to form an awareness of research methods that are used to study social behavior on the Internet.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4500 - Language and Technology (3 Credits)
Crosslisted with COMM 4500
Examines how new communication technologies affect the way we produce and understand language and modify interaction with one another. Focuses on the collaborative nature of language use and how Internet technologies affect the joint activities of speakers and listeners during the construction of meaning in conversation
Prerequisites: COMM 2450/INFO 2450 or permission of instructor.
Distribution Requirements: (SBA-AG), (SSC-AS)
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Spring 2010
Learning Outcomes:

- Demonstrate a detailed understanding of theoretical perspectives, through careful reading and discussion of class materials.
- Apply theories and methods from class to research projects.
- Demonstrate organizational and collaborative skills through group research projects.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4505 - Computing and Global Development (3 Credits)
To date, most computing technologies have primarily benefited urban, affluent, and literate people in developed regions by empowering them with more information, resources, and agency. These technologies currently exclude billions of people worldwide, such as rural residents, people with disabilities, and indigenous communities, who are too poor to afford modern devices, too remote to be connected, or too low-literate to navigate the mostly text-driven Internet. In recent years, researchers and practitioners have examined how computing technologies can be designed or appropriated to empower such underserved communities. This course introduces students to the field of Information and Communication Technologies and Development (ICTD). Through discussions of case studies from the Global South, students will study how computing technologies are used in different global development domains, such as agriculture, finance, health, social justice, and education. They will gain understanding of socio-economic, cultural, and political forces that impact technology adoption in low-resource environments and will learn to design, build, and evaluate inclusive technologies to empower marginalized people.?
Distribution Requirements: (SBA-AG), (SSC-AS)
Exploratory Studies: (CU-ITL)

Last Four Terms Offered: Fall 2024, Spring 2024, Fall 2022, Fall 2021
Learning Outcomes:

- Students will learn to unpack terms like development and poverty, and the role that technology has played in both, through recent decades.
- Students will learn how specific technologies have played out in key domains of global development, such as education, health, etc.
- Students will learn to identify and critically examine approaches to the design of technology in the context of global development.
- Students will learn to put these approaches into practice and analyze how other initiatives do the same.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4555 - Business Intelligence Systems (4 Credits)
This course covers the fundamental technical and organizational concepts and challenges related to the development of Business Intelligence Systems, a key component crucial to the competitiveness of a wide range of organizations. Topics covered include: data profiling, dimensional data modeling, data transformation, metadata systems, data governance, data delivery options, and an overview of emerging technologies in this space. Course is comprised of interactive lectures, work/lab sessions, and a substantial team project.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 4561 - Evaluation and Society (3 Credits)
Crosslisted with STS 4561, SOC 4560, SHUM 4561
Evaluation is a pervasive feature of contemporary life. Professors, doctors, countries, hotels, pollution, books, intelligence: there is hardly anything that is not subject to some form of review, rating, or ranking these days. This senior seminar examines the practices, cultures, and technologies of evaluation and asks how value is established, maintained, compared, subverted, resisted, and institutionalized in a range of different settings. Topics include user reviews, institutional audit, ranking and commensuration, algorithmic evaluation, tasting, gossip, and awards. Drawing on case studies from science, technology, culture, accounting, art, environment, and everyday life, we shall explore how evaluation comes to order our lives - and why it is so difficult to resist.
Enrollment Information: Enrollment preference given to: seniors, STS/BSOC majors.
Distribution Requirements: (SBA-AG), (SSC-AS)
Last Four Terms Offered: Spring 2023, Spring 2022, Spring 2019, Spring 2018
Schedule of Classes (https://classes.cornell.edu/)

INFO 4800 - Behavioral Science Interventions (3 Credits)
Crosslisted with COMM 4800
Last Four Terms Offered: Spring 2022, Spring 2020
Schedule of Classes (https://classes.cornell.edu/)

INFO 4900 - Independent Reading and Research (1-4 Credits)
Independent reading and research for undergraduates.
Exploratory Studies: (CU-UG)

Last Four Terms Offered: Summer 2025, Spring 2025, Winter 2025, Fall 2024
Schedule of Classes (https://classes.cornell.edu/)

INFO 4910 - Teaching in Information Science (1-4 Credits)
Involves working as a teaching assistant in a course in the information science or information science, systems, and technology major.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 4940 - Special Topics in Information Science (1-4 Credits)
This course explores what artificial intelligence (AI) can teach us about human storytelling. We'll tackle this question through a two-pronged approach: story understanding and story generation. Students will explore how AI and machine learning technologies have revolutionized our approach to analyzing narratives as well as computational methods and concepts for modeling stories, moving towards a broader understanding of storytelling's societal effects.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 4997 - Practical Training in Information Science (0.25 Credits)
This independent study course offers IS majors (i.e., undergraduates whose applications to affiliate with the IS major have been approved) an opportunity to reflect on concepts from information science as they were encountered and applied in a recent internship. Students write a short paper describing their work experience and how it connects to the educational objectives of the information science major.
Enrollment Information: Primarily for: undergraduate INFO majors whose application to affiliate has been approved and who require work authorization for an employer other than Cornell.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Learning Outcomes:

- Analyze societal implications involving information technology.
- Apply basic principles of information science to reason about information in the world.
- Understand the challenges and opportunities in information Science.

Schedule of Classes (https://classes.cornell.edu/)

INFO 4998 - Team Projects (1-4 Credits)
Advanced independent work in information science as part of a student-led team project. Students must make individual arrangements with a faculty sponsor. Students are expected to spend 3-4 hours per week per credit hour working on the project.
Enrollment Information: Enrollment limited to: sophomores, juniors, or seniors.
Exploratory Studies: (CU-CEL, CU-UG)

Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 5000 - Practical Training in Information Science for International Students (1 Credit)
This independent study course offers IS MPS Grad Students strictly for CPT purposes only.
Enrollment Information: Enrollment limited to: International INFO MPS students requiring CPT.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Learning Outcomes:

- Analyze societal implications involving information technology.
- Apply basic principles of information science to reason about information in the world.
- Understand the challenges and opportunities in information Science.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5001 - Computing for Information Science (4 Credits)
This is an applied course for data scientists with little-to-no programming experience who wish to harness growing digital and computational resources. The focus of the course is on generating reproducible research using programming languages and version control software. Major emphasis is placed on a pragmatic understanding of core principles of programming and packaged implementations of methods. Students will leave the course with basic computational skills implemented through many computational methods and approaches to data science; while students will not become expert programmers, they will gain the knowledge of how to adapt and expand these skills as they are presented with new questions, methods, and data.
Last Four Terms Offered: Fall 2024, Fall 2023
Learning Outcomes:

- Construct and execute basic programs using elementary programming techniques (e.g. loops, conditional statements, user-defined functions.
- Implement data science workflows using common, reproducible methods and software tools.
- Implement statistical learning and machine learning algorithms for a range of data structures.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5100 - Visual Data Analytics for the Web (3 Credits)
This course will cover technologies for representing, modeling and displaying data in the context of interactive web pages. Practical skills for building web pages will be mixed with data mining algorithms and visualization design theory. We will use the D3 Javascript library to develop both static and dynamic visualizations, learn more about programming in Javascript, and explore web scalable vector graphics (SVG). Through design critique and formal study, we will identify the techniques visualization developers employ to create the right visualization for a given use case.
Enrollment Information: Enrollment limited to: graduate students.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Students will gain practical skills for building web pages though the introduction of the data mining algorithms and theoretical approaches to graphics.
- Students will build project management skills through group interactions.
- Develop analytical tools for understanding the complex programming skills needed to build complex data systems.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5101 - Learning Analytics (3 Credits)
Technology has transformed how people teach and learn today. It also offers unprecedented insight into the mechanics of learning by collecting detailed interaction and performance data, such as in online courses and learning management systems like Canvas. At the intersection of education and data science, learning analytics are used to make sense of these data and use them to improve teaching and learning. This course blends learning theories and methodologies covering a wide range of topics with weekly hands-on activities and group projects using real-world educational datasets. You will learn how learning works, major theories in the learning sciences, and data science methods. Students collect and analyze their own learning trace data as part of the course. Learning outcomes: Students will learn to articulate key ideas in the learning sciences; articulate the potential benefits and dangers of learning analytics for students, teachers, and institutions; choose and apply appropriate methods for analyzing different kinds of educational data and be able to articulate why; and interpret the results of basic learning analytics.
Last Four Terms Offered: Spring 2025, Spring 2024, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5125 - Project Management (3 Credits)
This introductory course will emphasize the interpersonal skills necessary by project teams to manage demanding industry projects. Through a semester long simulated IS project, students will develop and apply a range of skills including time management, effective conflict resolution, negotiation, risk management, change control, and appropriate goal setting to adequately manage and execute their projects. Students will work in teams to engage in the 5 phases of the project management life cycle which includes: project initiation, planning, execution, monitoring, and project closure.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022
Learning Outcomes:

- Define industry project management lingo and terms.
- Use a range of project management skills such as time management, self- management, risk management and conflict resolution to solve a complex multi-faced Information Science (IS) project.
- Systematically apply the 5 phases of the Project Management (PM) life cycle to solve a simulated IS project.
- Collaborate in teams to cohesively execute and manage an IS software project.
- Devise strategies to address teaming challenges and create more inclusive IS teaming experience.
- Establish a team contract stipulating the team's acceptable modes of conduct.
- Reflect on how prior diverse (racial, cultural, ethnic etc.) project teaming experiences affect our understanding of project management best practices.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5140 - Law, Policy, and Politics of Cybersecurity (3 Credits)
This course explores selected topics in the law, policy, and politics of cybersecurity. Of specific interest will be a historical understanding of the development of the internet and how that history laid the foundation for the insecurity of products, services, and internet users' experience. Using a four-factor approach: law, market, social norms, and technology, we will explore the global landscape and its implications for situating cybersecurity in international law and global internet governance. The focus of the course will be on the United States, however, and will include topics such as the federal government's approach to cybersecurity, the National Cybersecurity Strategy, information security and risk management, types of cyberattacks and case studies, national defense generally and global internet governance.
Exploratory Studies: (CU-ITL)

Learning Outcomes:
- Define and scope cybersecurity and the history of insecurity products and use of information technology resources.
- Identify three security threats: individuals; organized crime; national states.
- Review legal remedies to software and security threats.
- Describe U.S. government cybersecurity organization and structure.
- Discuss U.S. government defensive and offensive approaches to cyber threats.
- Demonstrate a working command of zero-day exploits.
- Explain the balance of information security and risk management in corporate organizations.
- Define the relationship of cybersecurity and mis/disinformation campaigns.
- Formulate a cybersecurity framework for national security and the global context.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5145 - Privacy and Security in the Data Economy (3 Credits)
Increasingly, social and economic interactions are mediated by online platforms and algorithmic systems that rely on ubiquitous connectivity and data accumulation for their operation. While these systems have brought an unprecedented number of new products and services that have fostered growth and innovation, they have also created novel challenges to privacy and data security. In this course, we explore privacy and data security as multi-faceted concepts with economic, legal, social, ethical, and psychological underpinnings.
Last Four Terms Offered: Fall 2024, Fall 2022
Learning Outcomes:
- Identify the tradeoffs involved in decisions to protect or to disclose personal information.
- Understand information security not only as a technical problem, but a problem of competing incentives from multiple stakeholders.
- Relate economic and behavioral theories with privacy and security decisions.
- Analyze emerging privacy and security trends as a multi-faceted problem with technical and social dimensions.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5152 - Advanced Topics in Computer Game Design (4 Credits)
Students work in a multidisciplinary team to develop a game that incorporates innovative game mechanics. Advanced topics include nontraditional input schemes, advanced storytelling, social gameplay, and serious games. There is a special emphasis on developing games that can be submitted to festivals and competitions, or that can be commercialized. Students may take this course as either a programmer or a designer; the prerequisites differ depending upon the selected track. Contact the instructor for more information.
Prerequisites: Prerequisite for programmers: INFO 3152, CS 3300/ INFO 3300 or CS 4620 or CS 3700 or CS 5414 or permission of the instructor. Prerequisite for designers: INFO 3152 and INFO 3450, or permission of the instructor. Corequisite: ENGRC 5152 .
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 5200 - Information Policy: Applied Research and Analysis (3 Credits)
This course will address a wide range of information policy issues such as privacy, security, antitrust, intellectual property, algorithmic fairness, net neutrality, risk mitigation strategies, and other legal and policy compliance concerns in a simulated project management environment. Patterned on life cycle project management for products and services in contemporary large-scale technology companies, students will adopt specific topic areas for applied research and analysis working dynamically with other team members. Course outcomes include conducting upper-level research in specific information policy domains, experiential group dynamics, persuasive analytic presentations, fundamentals of project management in the technology sector, and insights into corporate hierarchies, organization, and functionalities.
Last Four Terms Offered: Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 5213 - Discrete Optimization for Urban Planning and Mobility (3 Credits)
Crosslisted with ORIE 5213
The course is organized around five major case studies on the use of discrete optimization and data (AI at large) for smart cities. Namely, 1) bike sharing, 2) bus transportation planning, 3) fairness in ambulance allocation (and police patrol), 4) downed tree reporting (NYC Department of Parks and Recreation), and 5) parcel delivery.The teaching is structured to provide three levels of understanding: a first level in which the problem is presented with its importance, impact, and characteristics. The need of a tech-based quantitative approach is claimed and justified. A second level in which, a high-level version of the algorithmic approach used to solve the problem is presented. A third level, dependent on students' interest and knowledge, in which the algorithmic approach is detailed.
Prerequisites: basic knowledge of linear algebra and data management.
Last Four Terms Offered: Spring 2025, Spring 2023
Learning Outcomes:
- Students will learn real case studies on modern city development, planning, and management. The three-level teaching structure should allow (i) the technically-oriented students to see how to use their competences on real-world problems, and (ii) the more domain-oriented students to be alerted at looking for technical solutions and recognize their need.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5230 - Ethical Perspectives on Digital Technologies (1 Credit)
This course introduces students to ethical thinking about digital systems. It focuses not only on how technology may be used for good or for ill, but how to take ethics, systematically, into consideration in analyzing, designing and developing it. Through lectures and discussion, the course introduces ethical concepts, such as privacy, fairness, and safety, and demonstrates their relevance to past and contemporary systems. In small groups, students will apply what they learn to in-class exercises and will be guided toward a final project in which they demonstrate learned concepts in concrete systems of their choosing. Although the course is designed to accommodate a wide range of educational backgrounds, it expects students to complete a common set of readings and participate actively in classroom discussions.
Prerequisites: Prior coursework in ethical thinking, or permission of instructor.
Learning Outcomes:

- Demonstrate basic concepts and competing perspectives in the philosophy of technology and the subfield of ethics and technology.
- Identify key social and political issues surrounding contemporary digital information systems, including, fairness, privacy, freedom of speech, and autonomy.
- Recognize how and to what extent ethical values may be embedded in technical systems, intentionally or otherwise and the role that designers and developers may (or may not) play in promoting ethical values in technical systems.
- Examine values embedded in particular systems or devices so as to recognize alternative designs with differing values implications.
- Demonstrate conceptually or by prototype the values implications of particular design choices in particular systems.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5235 - Sustainable Urban and Energy Delivery Systems (3 Credits)
Crosslisted with ECE 5235, ORIE 5235
The course focuses on how to transition from legacy energy delivery infrastructures dependent on fossil fuel to a sustainable decarbonized grid that harnesses distributed renewable energy resources and responsive demand from buildings, electrified transportation systems, and industrial loads. The content includes models and abstractions for the architecture of the cyber-physical energy system, its economics, and future evolution, and numerical optimization and learning methods in support of the infrastructure's safety critical operations in the legacy system and in the future architecture. At the MSc level the students will focus on learning how to use tools and data while at the graduate level the students will be asked to also solve problems, formulate novel solutions, interpret results. Similarly, to differentiate the MSc from PhD level and course outcomes, the final project will require the MSc students to pick one out of a set of predefined problems while the PhD students will have to define an original problem and solution.
Prerequisites: coursework in ML, data science, law and policy or ethics, calculus and algebra, algorithms, and python programming. Recommended prerequisite: coursework in theory and optimization.
Exploratory Studies: (CU-SBY)

Last Four Terms Offered: Fall 2024, Spring 2023
Learning Outcomes:

- Students will be able to identify technical and operational models for energy delivery systems and appreciate why energy consumption in urban environments is bound to continue to be the most significant source of emissions under the status quo.
- Students will learn about and analyze emerging technological solutions in wide area sensing and IoT networks, machine learning and decision models that support the coordination the distributed renewable resources on the supply side with the flexible demand of electricity in urban environments.
- Students will identify security challenges that are unique of cyber-physical infrastructures and need to be addressed to advance to rip the benefits of digital technology in the field.
- Through assignments and projects, the students will gain hands-on experience in demonstrating on how to apply novel data models, network technology and software tools that encompass the various topics covered in the class.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5240 - Designing Technology for Social Impact (3 Credits)
The social impact of technologies is typically thought about fairly late, if ever, in the design process. Indeed, it can be difficult at design time to predict what effects technologies will have. Nevertheless, design decisions can inadvertently lock in particular values early on. In this course, we will draw on science & technology studies, technology design, and the arts to analyze the values embodied in technology design and to design technologies to promote positive social impact. What social and cultural values do technology designs consciously or unconsciously promote? To what degree can social impact be built into a technology? How can we take social and cultural values into account in design?
Exploratory Studies: (CU-SBY)

Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5250 - Surveillance and Privacy (3 Credits)
This course explores the social, legal, and ethical facets of surveillance in modern life. New information technologies facilitate data collection at unprecedented scales and reaching across multiple domains. We explore the history and theory of data collection for purposes of social and political control, and how privacy is conceptualized and deployed in response to surveillant systems. We discuss how surveillance and privacy are situated in law and culture; the emergence of surveillance in law enforcement, workplaces, institutions, families, and self-tracking contexts; and the relationships among surveillance, power, and marginalization of vulnerable groups. We consider avenues through which surveillance is resisted, including technological and policy-based design strategies to mitigate the effects of data collection.
Last Four Terms Offered: Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5260 - Computing On Earth: Planetary Dimensions and Consequence of Computing (3 Credits)
This experimental, collaborative and seminar-based class will explore the material ethics of computing - the ways in which computing rests upon, emerges from, and ultimately returns to the earth, with deep and sometimes negative implications for sustainability, equity and justice in a rapidly changing world. Drawing on journalistic sources and academic fields ranging from anthropology, philosophy, public policy and environmental ethics to law, science and technology studies and human-computer interaction, the course will examine problems of computing-related sourcing and extraction, energy and consumption, and waste and repair, and how these are distributed and experienced in vastly different ways by different social groups and actors. Cases and examples will be drawn from near-to-hand and around the world.
Prerequisites: INFO 1200 or INFO 1260 or CS 1340 or permission of instructor.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023
Learning Outcomes:

- Explain and critically assess the material foundations and implications of computing, including as these relate to locations and communities around the world.
- Examine and explain your own values and policy preferences around the material ethics of computing, and offer reasoned arguments to support them (including in dialogue with the potentially differing positions of others).
- Discuss and appraise the key institutional, regulatory, and legal processes shaping questions of computing and sustainability in the U.S. and in other jurisdictions.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5265 - Accessibility and Inclusive Design (3 Credits)
This course introduces students to the design and evaluation of digital systems that are usable by people with a wide range of abilities and needs. Students will learn core concepts in accessibility, assistive technologies, and design patterns that support inclusion. The course emphasizes hands-on practice with evaluating and designing accessible websites, mobile applications, and emerging technologies. Examples of topics include assistive technologies for people with vision disabilities, web accessibility standards, and mobile accessibility. Through a combination of lectures, in-class exercises, and projects, students will develop the skills to create technology that is more usable and effective for everyone.
Learning Outcomes:

- Articulate the ethical, legal, and user-centered motivations for accessibility and inclusive design, using real-world examples to support your reasoning.
- Analyze how individuals with diverse physical, sensory, cognitive, and situational needs interact with digital technologies, and identify common barriers and adaptive strategies.
- Apply Inclusive Design principles to create or improve digital interfaces that accommodate user diversity and reduce exclusion.
- Conduct accessibility evaluations of digital systems using standards (e.g., WCAG), tools (e.g., axe, WAVE), and user feedback, and recommend actionable improvements.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5301 - Ethics in New Media, Technology, and Communication (3 Credits)
Crosslisted with COMM 5300
This course examines moral and ethical issues in communication, new media, and technology. Using theories and research in moral philosophy and psychology, we examine how people perceive and reason about ethical issues presented by media and technology, and how moral action is influenced by cognitive, emotional, and ethical belief systems. Issues of autonomy, transparency, harm, privacy, manipulation, justice, democracy, equality, and care are discussed. We analyze the consistency between personal and professional ethics, the importance of moral character and agency, and the translation of moral thought to ethical action, and address the development of professional and personal ethical codes of conduct and research for communication professionals in the areas of new media and technology.
Last Four Terms Offered: Summer 2025, Winter 2025, Fall 2024, Summer 2024
Learning Outcomes:

- Students will be able to increase awareness of moral and ethical issues in media, technology, and communication.
- Students will be able to explain moral psychology and ethical principles.
- Students will be able to examine moral reasoning and ethical responsibilities-both personal and professional-that affect people and society.
- Students will be able to examine issues and implications of ethical relativism and ethical principles.
- Students will be able to reason thoughtfully and ethically about current cases and news items in communication, media, and technology.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5303 - Privacy in the Digital Age (3 Credits)
Crosslisted with CS 5436
This course introduces students to privacy technologies and surveys the current state of digital privacy from multiple perspectives, including technology, law, policy, ethics, economics, and surveillance.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Fall 2024, Spring 2023, Spring 2022, Spring 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5304 - Data Science in the Wild (3 Credits)
Crosslisted with CS 5304
Massive amounts of data are collected by many companies and organizations and the task of a data scientist is to extract actionable knowledge from the data - for scientific needs, to improve public health, to promote businesses, for social studies and for various other purposes. This course will focus on the practical aspects of the field and will attempt to provide a comprehensive set of tools for extracting knowledge from data.The course will cover the topics needed to solve data-science problems, which include problem formulation (business understanding), data preparation (collection, sampling, integration, cleaning), data modeling (characterization, model selection, and analysis), implementation (large-scale data processing, feedback loops, QA) and communication (data presentation, visualization). Advanced topics such as causal inference and processing streaming data will be presented.Throughout the course, the students will perform a data-science mission with all the required steps, from problem formulation to result presentation.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 5305 - User Experience and User Research (3 Credits)
This course takes a deep dive into the user experience (UX) lifecycle--from conceiving an idea for a product to evaluating a prototype--and user research methods. We will cover techniques for understanding your target users (e.g., observations and interviews) and designing and evaluating your prototypes (e.g., lab studies and walkthroughs). If you have taken a human computer interaction class before, many of these techniques will be familiar. Our goal in this course is to go deeper, help you gain more practice and expertise so that you will be ready to apply what you learn when you graduate. The course lectures will cover the theory, history, and practical aspects of UX and user research methods. Student deliverables include many short in-class exercises and weekly homework assignments.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 5306 - Crowdsourcing and Human Computation (3 Credits)
Crosslisted with CS 5306
Crowdsourcing and human computation refer to various ways that computing has brought together human labor to achieve outcomes that were previously beyond our individual capabilities or expectations. Wikipedia's millions of articles, the success of Linux and other open source software projects, citizen science, and the generation of large datasets for machine learning and artificial intelligence using microlabor are all examples of ways in which technology and people together have exceeded the capabilities of people or machines in isolation. This course will survey the state of the art in this area and give practical knowledge of the area, grounded in numerous examples in diverse settings.
Prerequisites: advanced coursework in Computer Science.
Last Four Terms Offered: Spring 2024, Fall 2022, Fall 2021, Fall 2019
Schedule of Classes (https://classes.cornell.edu/)

INFO 5310 - Psychological and Social Aspects of Technology (3 Credits)
This course explores the psychological and sociological foundations of communication and information technology. The course focuses on the theories from the cognitive, behavioral and social sciences that play a role in understanding people's use of, access to and interactions with information and communication technologies. The course will examine multiple levels of analysis - individual, social, and social systems/communities - and present multiple disciplinary perspectives. The course will also provide a high-level view of methodologies used in the behavioral and social sciences.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5311 - Interactive Information Visualization (3 Credits)
This course explores a variety of techniques for making appealing and convincing representations of digital data. Students will build a toolbox of techniques for representing information, explore ways for making visualizations interactive, investigate how cognition makes data easy or hard to understand, and use their web development and data-scraping abilities to construct new visualizations. Projects centered around current issues will allow students to make use of their new knowledge both individually and in groups, and in-class critique sessions will refine their understanding of what makes for successful and unsuccessful designs.
Prerequisites: INFO 5100 or permission of instructor.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 5312 - Data Communication (3 Credits)
Data scientists often present information to disseminate their findings. This course introduces theories and applications of communicating with data, with an emphasis on visualizations. To support this approach, we will focus on the what, why, and how of data visualization. What focuses on specific types of visualizations for a particular purpose, as well as tools for constructing these plots. In how we will focus on the process of generating a data visualization from pre-processing the raw data, mapping attributes of the data to plot aesthetics, strategically determining how to define the visual encoding of the data for maximal accessibility, and finalizing the visualization to consider the importance of visual appeal. In why we discuss the theory tying together the how and the what, and consider empirical evidence of best-practices in data communication.
Prerequisites: INFO 5001.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023
Learning Outcomes:

- Implement principles of designing and creating effective data visualizations.
- Evaluate, critique, and improve upon one's own and others' data visualizations based on how good a job the visualization does for communicating a message clearly and correctly.
- Post-process and refine plots for effective communication.
- Master using R and a variety of modern data visualization packages to reproducibly create data visualizations.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5320 - Trust and Safety: Platforms, Policies, Products (3 Credits)
Crosslisted with CS 5342
Trust & Safety is an emerging field that focuses on reducing the harm from interpersonal abuse in digital spaces. The abuse types involved - harassment, misinformation, unwanted sexual content - are often lawful but awful, requiring developers to build their own socio-technical frameworks of what is appropriate behavior in their platform. In this course, we will look at digital abuse through an analysis of historical incidents. We will study how the field developed standards across algorithmic response, product design and manual removals. Students will join teams to describe an emerging online abuse type, develop appropriate moderation pipelines (e.g., using modern machine learning such as LLMs), and detail associated policies, all in an environment mimicking the realities seen in practice. This course might expose students to disturbing material.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Spring 2025
Learning Outcomes:

- Recognize common abuse categories as they intersect with modern digital technologies.
- Analyze the varying levers in the hands of product owners to reduce abuse, including safety-by-design, proactive ranking choices and reactive removals.
- Recognize the ethical trade-offs behind content moderation decisions in online spaces.
- Identify emerging risks and make decisions around the correct precision/recall boundaries for a classifier built to detect harmful content.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5321 - Introduction to Rapid Prototyping and Physical Computing (4 Credits)
This class provides an introduction to modern rapid prototyping techniques such as laser cutting, 3D printing and microcontroller programming (such as the Arduino system). Using these tools, small multidisciplinary groups conduct the hardware project of their choice exploring topics as varied as: Universal Access, tangible interfaces, toys, personal or medical assistants and new musical instruments.
Course Fee: Course Fee, $300. Course fee.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 5330 - Technology, Media, and Democracy (3 Credits)
This course evaluates the role of the information ecosystem in contributing to the health of our society with the goal of developing ideas and tools that can help citizens be equipped with the knowledge and information required to address the challenges that we face. Specifically, the course examines the socio-technical aspects of our information ecosystem and how they may hinder, or challenge, the functions of society in particular in representative democracies such as the United States. Key topics include (a) how the design of platforms, algorithms, monetary models, and online communities impacts our information ecosystem; (b) the challenges for credible and trustworthy information ecosystem and how can they be addressed; (c) the breadth of abuse and adversary online from mis- and disinformation to online harassment, including the types of abuse, the adversarial actors online, what are they goals, methods, and how they can be countered.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 5340 - Virtual and Augmented Reality (3 Credits)
Crosslisted with CS 5650
This course presents an introduction to virtual and augmented reality technologies, with focus on fundamental principles from 3D math, human perception, graphics, and interaction. Concepts from the contributing fields of computer vision, computer graphics and human computer interaction will be introduced in the context of virtual and augmented reality. Students will be tasked with creating their own virtual or augmented reality application as a course project.
Prerequisites: intermediate programming ability in C# or other object-oriented lagnuages. Familiarity with 3D game engines or strong desire to learn. Basic linear algebra.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5342 - Designing Ubiquitous and Interactive Computing Devices (3 Credits)
This course will introduce students to the fields of ubiquitous computing and interactive device design, drawing from such diverse fields as electronic circuit design, signal processing, machine learning, and human-computer interaction. Taking a hands-on, lab-based approach, students will prototype their own interactive devices and use them to collect data and interact with users. Students will learn about fabrication techniques and printed circuit board design, and apply them to create their own devices. For the final project, students will build a functional embedded or wearable device that can be applied to problems in health technology, urban design or other real-world applications. Topic areas include electronics, sensors, actuators, interface design, physical prototyping, and user testing.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Spring 2025
Learning Outcomes:

- Students will be able to describe the history and background of the field of ubiquitous computing and to identify current trends and challenges in the field.
- Students will be proficient in designing systems with sensors and signal processing, including machine learning techniques, feature engineering and designing models to run on edge devices.
- Students will prototype interactions using a variety of techniques from storyboards and paper prototypes to fully functional connected devices.
- Engaging with electronic circuit design and prototyping, including circuit board design fundamentals and coding for microcontrollers, students will create a physical computing device as a final project.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5345 - Developing and Designing Interactive Devices (3 Credits)
Crosslisted with CS 5424, ECE 5413
This course covers the human-centered and technical workings behind interactive devices ranging from cell phones and video game controllers to household appliances and smart cars. This is a hands-on, lab-based course. For the final project, students will build a functional IoT prototype of their own design, using Python, single-board Linux computer, embedded microcontrollers, and/or other electronic components. Topics include electronics prototyping, interface design, sensors and actuators, microcontroller development, physical prototyping, and user testing.
Prerequisites: CS 1110 or equivalent.
Last Four Terms Offered: Fall 2023, Fall 2022, Fall 2021, Spring 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5350 - Behavioral Economics for Tech (3 Credits)
Behavioral economics studies the effect of psychological, social, cognitive and emotional factors on humans' decisions and behavior. This course will help students learn key concepts from behavioral economics and apply them in their daily lives, in the design of products, and in the research of human behavior. This course will explore the opportunities and challenges faced by researchers and practitioners when exploring the interplay between behavioral economics and technology.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Spring 2021, Spring 2020, Spring 2019, Spring 2018
Schedule of Classes (https://classes.cornell.edu/)

INFO 5355 - Human Computer Interaction Design (3 Credits)
This course focuses on user experience design (UX) and the life cycle of interface design from the user perspective. We will discuss key aspects of the human-centered design process: understanding, analyzing, and formalizing user needs, exploring possible design solutions to address user needs, creating prototypes to externalize design ideas, and evaluating the usability of these prototypes.
Last Four Terms Offered: Summer 2025, Fall 2024, Spring 2024, Fall 2023
Learning Outcomes:

- Students will be able to appraise the human-centered design cycle and human-computer interaction design concepts.
- Students will be able to build practical skills required to apply the human-centered design process in technology design through class activities and a semester-long project.
- Students will be able to design a user interface in a semester-long project, including interim milestones that walk the students through the specific stages of the design process.
- Students will be able to develop teamwork skills through a semester-long group project.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5356 - Introduction to Human-Robot Interaction (3 Credits)
Robots are making their way into our everyday lives, working across several applications including in people's home, healthcare, and retail settings. As these systems become more integrated into our lives, it is important that they are designed to be useful, functional, and socially acceptable; however, this remains a key challenge for the field of human-robot interaction (HRI). This is a project-based course that covers core computational, engineering, and social challenges and approaches for effective HRI in human-centered environments. Topics include perception of people, computational HRI, design in HRI, coordination and collaboration, and experimental robotics. Students should expect to learn about seminal research in HRI, gain hands-on experience with physical mobile robots, and implement systems for real-time interaction with users.
Prerequisites: CS 2800 or equivalent.
Last Four Terms Offered: Fall 2024, Fall 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 5358 - 3D Interaction Design (3 Credits)
Designing products and experiences for head-mounted displays, often with novel inputs such as hands and eyes, introduces new challenges for designers when compared to traditional devices and user interfaces. This course presents the theoretical and practical foundations of the field of 3D User Interfaces (3DUIs) and 3D interaction design for virtual and augmented reality applications. The course will highlight the differences between 2D and 3D interaction design, introduce design principles, best practices for prototyping, and case studies. Students will be tasked with designing, implementing, and evaluating interaction prototypes of different fidelity for 3DUI tasks such as selection and manipulation, travel, and system control.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Spring 2025
Learning Outcomes:

- Demonstrate understanding of concepts from human-computer interaction in the context of 3D user interfaces.
- Demonstrate understanding of classic 3D interaction techniques and current trends, both in academic research and commercial product design.
- Demonstrate understanding of the unique challenges and opportunities when designing products and experiences with 3D user interfaces.
- Demonstrate the ability to design 3D user interface prototypes of different fidelities.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5360 - Healthcare Organization and Delivery (2 Credits)
The goal of this course is to educate students about the complexity and nuances of healthcare delivery. The course will be especially useful for non-clinicians who intend to go into fields that will require a detailed understanding of healthcare. Class sessions will analyze healthcare, so that students learn to identify tensions in healthcare and opportunities for improvement. Students will come away from the course with a deeper appreciation of why it is difficult to change healthcare. They will then be able to anticipate the intended and unintended consequences of interventions and policies that they and others might implement.
Enrollment Information: Enrollment limited to: Cornell Tech Students.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5365 - Responsible AI (3 Credits)
The deployment of AI systems in multiple domains raises fundamental concerns over societal values, such as, accountability, liability, fairness, transparency and privacy. The dynamic nature of AI systems requires a new set of skills informed by ethics, law, and policy to be applied throughout the life cycle of such systems: design, development and deployment. It also involves ongoing collaboration among data scientists, computer scientists, lawyers and ethicists. Tackling these challenges calls for an interdisciplinary approach: deconstructing these issues by discipline and reconstructing with an integrated mindset, principles and practices. This course aims to do so by bringing together students with diverse disciplinary backgrounds into teams that work on joint tasks in an intensive series of in-class sessions. These sessions include lectures, discussions, and group work. The course also brings together students from three campuses: Cornell Tech, Tel Aviv University Faculty of Law, and Technion with instructors and TAs from each.
Prerequisites: basic knowledge of ML, data science, law and policy, or ethics.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Summer 2021
Learning Outcomes:

- Increased understanding of the impact of AI on individuals, groups, society and humanity.
- Proactive capacity to identify ethical issues and anticipate and analyze unintended consequences and potential harms.
- Increased ability to communicate with professionals from other disciplines, and jointly translate across disciplinary domains.
- Introductory ability to oversee and audit AI systems through their life cycle (design, development and deployment).
- Increased capacity to identify and use resources to achieve all of the above.
- For those entering the field of data science, the course demonstrates how responsible professionals recognize, analyze, and behave in the face of ethical and legal challenges.
- For those entering management or policy positions, the course offers insight into the development and operation of AI systems.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5368 - Practical Applications in Machine Learning (PAML) (3 Credits)
This course provides hands-on experience developing and deploying foundational machine learning algorithms on real-world datasets for practical applications (e.g., healthcare, computer vision). Students will learn about the machine learning pipeline end-to-end including dataset creation, pre- and post-processing, annotation, annotation validation, preparation for machine learning, training and testing a model, and evaluation. Students will focus on real-world challenges at each stage of the ML pipeline while handling bias in models and datasets. Lastly, students will analyze the strengths and weaknesses of regression, classification, clustering, and deep learning algorithms.
Prerequisites: recommended coursework in Python Programming
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023
Learning Outcomes:

- Collect a new dataset and prepare it for a ML task, train a model, and evaluate it.
- Apply regression, classification, clustering, and deep learning algorithms to practical applications.
- Analyze and identify key differences in regression, classification, clustering, and deep learning algorithms.
- Understand core challenges of dataset creation including handling missing data, bias, unlabeled data, among others.
- Represent features in datasets to be used for ML tasks.
- Evaluate model quality using appropriate metrics of performance.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5370 - Applied Data Science: Decision-Making Beyond Prediction (3 Credits)
Crosslisted with ORIE 5355
This course considers the data science challenges beyond training an accurate predictive model, especially for systems about people (data of behavior), and for people (deployed models to influence behavior). Whether for online marketplaces, transportation, governmental, or urban systems, effective data science in such settings requires dealing with user incentives and strategic behavior, networked and decentralized decision-making, and privacy and ethics concerns. Primary evaluation will be through programming based assignments (in Python) and conceptual questions.
Prerequisites: Recommended prerequisite: ENGRD 2700, CS 1380, or equivalent, and experience programming in Python. Recommended corequisite: INFO 5430 or CS 5785.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Articulate common challenges in data science about and for people.
- Design, develop, and deploy data science models that effectively deal with such challenges.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5371 - Studying Social Inequality Using Data Science (3 Credits)
Inequality is high in American society. Income and wealth are concentrated in far fewer hands than in other industrialized countries. Labor market outcomes are patterned by disparities across lines of race, gender, and class. This course will introduce social science theories about the origins of inequality, emphasizing how inequality is transmitted over time and across generations. Building on these theories, students will deploy tools for data science to visualize inequality, understand inequality, and evaluate hypothetical policy interventions that might reduce inequality. We will use the R programming language. A theme of the course is that applied work in this area can give rise to new data science tools, which may help solve some of society's most pressing challenges.
Prerequisites: INFO 2950 or equivalent.
Last Four Terms Offered: Spring 2024, Spring 2023
Learning Outcomes:

- Visualize economic inequality with graphs that summarize survey data.
- Connect theories about inequality to quantitative empirical evidence.
- Evaluate the effects of hypothetical interventions to reduce inequality.
- Conduct data analysis using the R programming language.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5375 - Machine Learning for Health (3 Credits)
This course introduces students the various real-world health related problems such as patient screening, risk modeling, disease subtyping and precision medicine, along with their associated data, such as patient clinical records, medical images, physiological and vital signals from wearable sensors, multi-omics, etc. and how to use appropriate machine learning algorithms to analyze these data and help with the corresponding real-world health problems. The machine learning techniques involved in this class include classic supervised and unsupervised learning, network analysis, probabilistic modeling, deep learning, transfer learning, federated learning, algorithmic fairness and interpretability. We will also invite clinicians or researchers working in the health industry to deliver guest lecturers in the class. The students will gain hands-on experience on analyzing real world health data during course assignments and projects.
Prerequisites: basic knowledge of machine learning, algorithms and python programming.
Enrollment Information: Enrollment limited to: Cornell Tech Students.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Students will be able to understand the real health problems, identify potential beneficiaries and stakeholders, and formulate these problems under machine learning frameworks.
- Students will be able to understand the different types of health data captured in different scenarios, and identify appropriate machine learning pipelines to analyze them and obtain desired results.
- Students will be able to demonstrate the process and results of the machine learning to health professionals in appropriate ways, and capture their feedbacks to further improve the model.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5380 - Digital Fabrication: Manipulating the Matter of Tech (3 Credits)
Crosslisted with ECE 5245
Historically, computing encompassed one-dimensional Input/Output using command line interfaces. The GUI and mouse brought 2D I/O to computing, and later VR and 3D Scanning allowed for 3D I/O. The next thing is interacting with matter as I/O for computing: Digital Fabrication. This course teaches fabrication techniques, and how to leverage it to control physical matter. This will allow you to develop hardware or understand how to talk to hardware developers within your team. We will dive down to the bare bones of fabrication machines by creating custom slicers to control 3D printers using basic coding. We will take apart existing products to study how they were made and build entirely new products from scratch.
Last Four Terms Offered: Spring 2024, Spring 2023
Learning Outcomes:
- Students will be able to understand the real health problems, identify potential beneficiaries and stakeholders, and formulate these problems under machine learning frameworks.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5390 - Practical Principles for Designing Fair Algorithms (3 Credits)
Algorithms increasingly guide high-stakes decision-making across many domains. This has potential upsides, since algorithms can improve decision-making, but also serious risks, since recent years have showcased the many ways that algorithms can be biased. This course will teach you principles for designing fair algorithms, emphasizing accessibility to a broad audience via practical takeaways which are directly relevant to the real world through case studies and guest speakers. Case studies will be drawn from diverse settings where algorithms are applied, such as large language models, speech recognition systems, healthcare, criminal justice, sustainability, and education. Students will come away with a strong understanding of how algorithm-related choices can have widespread societal impact.
Last Four Terms Offered: Spring 2024
Schedule of Classes (https://classes.cornell.edu/)

INFO 5400 - Qualitative User Research and Design Methods (3 Credits)
This upper-level course provides an in-depth understanding of and experience with advanced concepts and techniques for researching, ideating, critiquing, designing, prototyping, and evaluating interactive technologies intended for people to use and incorporate in their lives. The course focuses on advanced user research and design methods.
Prerequisites: INFO 3450/COMM 3450 /INFO 5355 or permission of instructor.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:
- Students will be able to develop in-depth understanding of human-computer interaction theory, design, and research through readings, class discussions, and weekly workshops.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5410 - Urban Systems (3 Credits)
Social scientists such as sociologists, economists, and anthropologists, as well as policymakers seek to better understand cities, in order to answer important theoretical questions, such as: what is a city in the first place; how does a city grow; what is a better city (and who is it better for); and (how) can we create and/or develop better cities. This course provides an integrative introduction to these disciplinary perspectives on cities so students acquire an overview of the key systems, processes, and technologies that must be managed, operated, and maintained in any urban center. The goal of the class is to unpack the complex interplay among institutions, markets, and citizens in the context of the financial, political, administrative, and legal policies that exist in urban communities so that students can understand urban systems in a holistic manner. We will deploy the lenses of three defining cornerstones of urban environments - institutions; real estate; and mass transit - to examine the management of cities and conflicts that arise within them, the design and use of public spaces and infrastructure, and the relationship between the public and the private spheres. The course pedagogy is a mix of participatory learning in the classroom and field visits/labs and expert lectures. The course will equip students with the conceptual and analytical tools necessary to ensure equitable, sustainable, and financially and politically viable approaches to urban challenges. It is primarily designed for students interested in working for a city, or in starting, working at, advising, or financing for-profit or not-for-profit ventures operating in the urban technology and innovation space.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5420 - Urban Design Strategies and Case Studies (3 Credits)
The course will ground students in the basics of urban and spatial design practices as well as the surrounding environmental, sociological, political, and economic dimensions. This course will use primary and secondary source material and theoretical and empirical works to understand cities as complex interrelated environments. Students will learn about the multidimensional drivers that shape the urban systems and built environment that form our cities. The course will teach students how to analyze and transform urban environments to create livable and sustainable cities for future generations. The course will also contribute a design perspective for the program: project based, empirical, iterative, situated, and integrative. The course uses New York City as a real-world laboratory and augments foundational and theoretical examples with case studies of successful and unsuccessful initiatives. Students will develop projects that address urgent urban challenges such as sustainability, infrastructure, resiliency, mobility, affordability, access, and equity and will propose forward-thinking and technologically driven design approaches to urban challenges.
Prerequisites: INFO 5410.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 5430 - Urban Data (3 Credits)
This course provides a broad overview of the opportunities and challenges related to urban data and helps familiarize students with key datasets and the tools and methodologies to visualize and analyze them.The course will introduce a framework to reason about urban data and will present various tools and methodologies to process the data, including data mining, machine learning, GIS, network analysis, simulation, agent-based modeling, and data visualization. Traditional Big Data challenges will be reviewed and the associated challenges speci?c to urban data such as quality, privacy, bias, and data governance will be highlighted. Students will also be introduced to the relevant optimization and simulation models so as to enable them to leverage these tools for data-driven decision-making and creating policy.
Prerequisites: INFO 5410.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Fall 2024, Fall 2022, Fall 2021
Learning Outcomes:

- Discover relevant open data datasets to answer questions related to a given urban data issue.
- Think critically about new kinds of urban data in terms of collection, storage, and processing; students will also be able to assess issues related to privacy and bias.
- Ingest, process and visualize urban data including tabular data, GIS data or graph data.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5431 - Teams and Technology (3 Credits)
This course provides practical, experiential training designed to enhance students' teamwork and team-leadership skills through hands-on activities, reflection, and collaborative discussions. Recognizing that technology fundamentally shapes how we collaborate, students will explore how to effectively use technological tools—such as remote collaboration platforms, virtual meeting applications, and novel AI tools—to enhance team interactions and productivity. Each session includes interactive tasks aimed at building critical interpersonal skills, including managing group dynamics, resolving conflicts, improving communication, facilitating decision-making processes, and developing leadership strategies in technologically supported environments. Students will regularly reflect on their personal experiences and collaboratively assess how different technologies influence teamwork and collaboration. Grounded in insights from organizational behavior, social psychology, and human-computer interaction, the course emphasizes the practical application of skills essential for navigating and leading teams effectively. Upon completion, students will be equipped with concrete strategies and confidence to build and lead effective teams.
Course Fee: Course Fee, $ 50.00. Students are expected to budget up to $50 for course materials such as case studies and simulation exercises.
Last Four Terms Offered: Fall 2024, Fall 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 5440 - App Design and Prototyping (3 Credits)
In this interactive studio-based course, students will gain practical experience independently creating high-fidelity prototype apps. This course has a significant software development focus, exposing students to software development methods and tools necessary for developing interactive software prototype applications. This includes employing UI component libraries, event-based programming, generative AI, basic command line usage, and debugging. Learning how to solve technical problems and use unfamiliar technology independently is emphasized; students should not expect step-by-step lectures or instructions for authoring their prototypes. Proficiency in dynamic client and server-side web programming is assumed.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Fall 2022
Learning Outcomes:

- Design and implement high-fidelity prototypes of interactive software applications independently.
- Leverage the language of user interfaces to design interfaces that engage in a conversation with users.
- Leverage hardware and system APIs to add advanced functionality to prototypes.
- Independently approach technical problems and use unfamiliar technology you haven't been directly "taught".
- Explore unfamiliar code and technology as a strategy for building working prototypes.
- Effectively utilize generative AI to assist in the design and development of prototype apps.
- Demonstrate a high standard of professionalism and development best practices.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5450 - Computer-Mediated Communication (3 Credits)
Focuses on reading and evaluating the theories and research methodologies used to investigate communication via computer systems. Assignments include student collaborations using electronic conferencing and other advanced communication technologies, as well as reflections on and evaluations of these collaborations in light of current theories and research findings. Topics include virtual teams, videoconferencing, and others as they emerge.
Enrollment Information: Enrollment limited to: MPS students.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 5455 - Smart Cities: Requirements, Ambitions, and Limitations (3 Credits)
The smart cities movement was born during the Global Financial Crisis of 2007-8. When multinationals slashed spending on IT, governments ramped up stimulus spending. Big vendors like IBM, Cisco, and Siemens seized the opportunity to port enterprise tech to the municipal sector. This project didn't get far. While there have been successes, city governments were slow to define and procure smart cities solutions. And the context changed. Consumer tech innovation raced ahead, drawing a new group of giant firms into the fray. They brought new technologies, but also more money, new business models, and more aggressive approaches to government affairs and deregulation. This shift from smart cities to urban tech is ongoing and defines the landscape for engineering cyberphysical urban systems today. This course is a survey of smart cities and urban tech for engineers, organized around 12-15 broad technical capabilities that reflect widely-shared views of what this movement seeks to achieve.
Enrollment Information: Enrollment limited to: Cornell Tech Students.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Students will be able to understand smart city capabilities, key technical standards that define them, and their overall state of development.
- Students will be able to understand key stakeholders in smart city innovation and diffusion, including their goals and motivations, and resources and constraints-including city governments, corporations, entrepreneurs, and NGOs.
- Students will be able to understand how foresight and strategic planning is used to assess, anticipate, and adapt to technological, economic, and social change.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5460 - The Politics and Policy of Urban Sustainability (3 Credits)
Cities are increasingly recognized as a key level of government for environmental and sustainability policy. As at all levels, politics and policy are intensely intertwined, and perhaps moreso at the local level because the decisions involved often affect constituents directly and intimately - in their neighborhoods, in their homes, in their commutes. This course explores both the politics and the policy of sustainability in the municipal context. Covering a range of sustainability issues - such as air quality, public health, and transportation - it looks at the dynamics of making change happen at the local level, including variations in power among municipal governments; how issues get defined and allocated; how stakeholder management takes place (or doesn't); how agencies and levels of government interfere with each other; and how best practices can (and cannot) be transferred internationally. The course is reading-intense and includes case studies by historians rather than political scientists. The focus of most readings is on the United States, but students' research projects will require looking beyond the US and transferring practices to a US city.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Fall 2023, Fall 2022
Learning Outcomes:

- Understand the broad forces at play shaping urban sustainability policy, including the key drivers of environmental challenges in cities; the role and limits of municipal government; the way technology and economics shape land use; the way people understand shared public space; how cities change their environments over time; how stakeholders influence policy at the local level; and how racism and other forms of inequality create different environmental outcomes.
- Understand the role of the policy advisor to a mayor.
- Have a very high-level awareness of key tupes of environmental policies being put in place at the municipal level.
- Be able to distinguish among context analysis, problem diagnosis, and solutions in policymaking.
- Have a sense of how urban sustainability policy is likely to evolve over the next 10-20 years.
- Execute, with a team, a detailed policy analysis and recommendation for a mayor of a significant world city.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5500 - Health Tech Clinical Practicum (1-4 Credits)
This course is designed to give students hands on experience applying health tech tools and methods to real world clinical challenges. Students will work (individually or in pairs) with a clinical advisor to assess a particular clinical need for application of digital technology and based on that assessment students will develop a feasibility prototype. Through the implementation process, students will have the opportunity to shadow their clinical advisor in a clinical or research setting.
Enrollment Information: Enrollment limited to: Health Tech students at Cornell Tech.
Last Four Terms Offered: Fall 2023, Spring 2023, Spring 2022, Spring 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5505 - Computing and Global Development (3 Credits)
To date, most computing technologies have primarily benefited urban, affluent, and literate people in developed regions by empowering them with more information, resources, and agency. These technologies currently exclude billions of people worldwide, such as rural residents, people with disabilities, and indigenous communities, who are too poor to afford modern devices, too remote to be connected, or too low-literate to navigate the mostly text-driven Internet. In recent years, researchers and practitioners have examined how computing technologies can be designed or appropriated to empower such underserved communities. This course introduces students to the field of Information and Communication Technologies and Development (ICTD). Through discussions of case studies from the Global South, students will study how computing technologies are used in different global development domains, such as agriculture, finance, health, social justice, and education. They will gain understanding of socio-economic, cultural, and political forces that impact technology adoption in low-resource environments and will learn to design, build, and evaluate inclusive technologies to empower marginalized people.?
Exploratory Studies: (CU-ITL)

Last Four Terms Offered: Fall 2024, Spring 2024, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5555 - Health Tech, Data, and Systems (1-2 Credits)
This course is a survey of the computing systems, technologies, and data sets used throughout the healthcare system--spanning provider, patient, payer, and pharma. Students will gain an understanding of the functional requirements and constraints placed on these digital systems and to provide a basis for future innovation.
Prerequisites: CS 2110 or CS 4110.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Fall 2023, Fall 2021, Spring 2020, Spring 2019
Schedule of Classes (https://classes.cornell.edu/)

INFO 5556 - Business Intelligence Systems (4 Credits)
This course covers the fundamental technical and organizational concepts and challenges related to the development of Business Intelligence Systems, a key component crucial to the competitiveness of a wide range of organizations. Topics covered include: data profiling, dimensional data modeling, data transformation, metadata systems, data governance, data delivery options, and an overview of emerging technologies in this space. Course is comprised of interactive lectures, work/lab sessions, and a substantial team project.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5600 - AI for Healthcare (3 Credits)
With the rise in the availability of clinical and behavioral data in the world, artificial intelligence (AI) is now increasingly applied in the field of healthcare. Researchers are working on using AI in different spheres of the healthcare process ranging from understanding of the human behavior, early diagnoses of medical conditions and even recommendations for personalized treatment procedures. Physicians are using machine learning algorithms on clinical images for early detection of cancer. Researchers have shown that smartphone sensor data can be used to detect events like opioid overdose and enable just-in-time interventions to save lives. Psychologists are mining data from social networks to detect mental health conditions. This project based course will introduce the students to these next generation AI based healthcare systems and will focus on the design and implementation of these systems for the real world.
Prerequisites: basic knowledge of machine learning, deep learning techniques and coding experience.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5610 - Sensors, Systems and Algorithms for Precision Behavioral Health (3 Credits)
Precision Behavioral Health will introduce students to the sensors, computational systems and algorithms that will play a transformative role in the diagnosis, treatment, and management of mental and behavioral health. Recent computational advancements have repurposed ubiquitous technologies for passive and remote mental health measurement. These technologies have the potential to disrupt mental healthcare, giving clinicians more resources to manage patients' mental health and deliver care at lower cost. Yet, these technologies will also disrupt clinical workflows and data sharing norms, requiring frameworks for responsible use. Within this course, students will participate in seminar discussions and hands-on projects to learn about the ongoing advancements in multi-modal sensor fusion and AI algorithms for symptom measurement, technology-driven intervention, and the ethical implications of building these tools.
Prerequisites: CS 5785 /ECE 5414 /ORIE 5750 or demonstrated foundational programing and machine learning knowledge.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Fall 2023, Fall 2020
Schedule of Classes (https://classes.cornell.edu/)

INFO 5755 - Mobile Human Robot Interaction Design (3 Credits)
Crosslisted with CS 5755
Robot and automated systems often need to move in and around people. This technical and human-centered course surveys current physical, computation and sensing technologies that make mobile human robot interaction possible, and delves into key research problems in interaction, human modelling, and repair which are needed to tackle the grand challenge of mobile HRI. As part of this course, students will build working prototypes of mobile robots, and deploy them for study in human environments. The 5000-level version of this course focuses on platform development; the 6000-level version of this course focuses on the production of human participant research studies using mobile HRI.
Prerequisites: proficiency in Python.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Spring 2023
Learning Outcomes:

- Identify key hardware, software and modelling components for mobile robot systems.
- Analyze human behavior to enable safe and socially appropriate mobile robot response.
- Demonstrate capability to develop and test mobile robot systems.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5800 - Behavioral Science Interventions (3 Credits)
Crosslisted with COMM 5800
Last Four Terms Offered: Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 5900 - MPS Project (3 Credits)
Independent research for Master of Professional Studies students.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 5905 - Professional Career Development (0.5 Credits)
This course will focus on career development topics specifically for MPS Information Science students. Through a series of discussions, activities, and guest speaker lectures, students will further develop career success strategies with an emphasis on personal strengths, networking, communication, and professional branding. By the end of the course, students will be able to identify and articulate to prospective employers, their unique interface between computing and the world.
Enrollment Information: Enrollment limited to: MPS and early admission undergraduate students.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 5910 - Revolutionary Technologies (3 Credits)
The goal of this course is to help students deepen their theoretical and historical perspective on social change and the relationship between social change and technology. We will read a range of revolutionary thinkers including, but not limited to, Karl Marx, Friedrich Engels, Antonio Gramsci, Stuart Hall, Mahatma Gandhi, E.F. Schumacher and Frantz Fanon. We will study their theories of revolution and the underlying tensions within the division of labor in society, and discuss the role that technology can play in forming and reforming these social relations. We will use this as a lens to reflect both upon existing technology and the underlying relations that create and sustain it, as well as to envision new technological possibilities supported by (and supporting) alternative forms of human organization. Coursework will consist of significant reading, regular reading reflections, design exercises and a final course project.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 5915 - Remaking the City (3 Credits)
This workshop-based service learning course will engage students in participatory design projects that use technology to support community-based organizations in urban contexts. The engagement will be structured as team-based internships, where students will be required to commit up to 5 hours per week to support the organization in its technology needs. We will reflect on these experiences, and connect them to broader themes impacting cities and the civic organizations within them - including migration, race, gender and disability. Students will learn and apply user-centered and participatory design methodologies; theoretical frameworks that help us understand the modern city; the unique technology challenges facing small community-based and civic organizations.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 5920 - Specialization Project for Connective Media, Health Tech, and Urban Tech (1-5 Credits)
All students of the Jacobs Institute are required to complete a two-semester Specialization research project. We offer two Tracks for completing this requirement. * Track 1 Specialization projects are conducted in small teams on topics suggested and supervised by researchers at Cornell Tech or Weill Cornell. Track 1 students register for 4 credits of INFO 5920 in their first year Spring semester, as well as 4 credits of INFO 5920 in their second year Fall semester. * Track 2 Specialization project topics can be defined by the student; so long as they are 'anchored' with a 3-credit approved-elective course, and reviewed for program relevance by the INFO 5920 instructor. Track 2 students register for 3 credits of their anchor elective course and 1 credit of INFO 5920 during their first year Spring semester. Track 2 students register for 4 credits INFO 5920 in their second year Fall semester. In general, Specialization projects result in tangible, concentration-relevant deliverables in the form of prototypes, analyses, research studies, and/or publications, which become a sharable part of the student portfolio.
Prerequisites: TECHIE 5901.
Enrollment Information: Enrollment limited to: Cornell Tech Jacobs MS program students.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Learning Outcomes:

- Work and solve open-ended problems.
- Demonstrate the ability to coordinate and work with a team.
- Apply technical knowledge and skills acquired from other program courses.

Schedule of Classes (https://classes.cornell.edu/)

INFO 5940 - Special Topics in Information Science (1-4 Credits)
Study of topics not currently covered in INFO offerings, as determined by faculty and student interest.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 6010 - Computational Methods for Information Science Research (3 Credits)
Computation is an essential tool for many facets of information science research. Examples of its utility include capture, access and analysis of digital data; visualization of data for analysis, interpretation and information extraction; construction of user focused applications; and analysis of textual and sensor-derived information to detect patterns and dynamics of human activities, social interactions and social networks. Effective use of computation requires a mixture of skills including structuring data, accessing data, and programming, choosing and applying computational analysis methods, and designing visualizations. This course covers the mixture of these skills with the goal of providing INFOSCI graduate students with the appreciation of their utility and ability to employ them in future research.
Prerequisites: programming ability at the level of CS 1110 or CS 1112; this includes variables, arrays, strings, loops, conditionals, methods and functions, basic recursion, file IO, object orientated design, debugging. No prior knowledge of Python is required.
Last Four Terms Offered: Spring 2023, Spring 2020, Spring 2019, Fall 2017
Schedule of Classes (https://classes.cornell.edu/)

INFO 6113 - Technology and Law Colloquium (3 Credits)
Crosslisted with LAW 7113
This course explores new developments at the intersection of law and information technology. The class is structured as a series of dialogues with a diverse group of scholars - professors, practitioners, journalists, and others -- investigating how law and new technologies interact with and shape one another across many different domains. Students will be exposed to innovative research about technology policy, privacy, platforms, law enforcement, the nature of expertise, and the changing nature of legal and technical practice. The class will include both a public lecture component and a smaller group discussion.
Last Four Terms Offered: Fall 2021, Fall 2018, Fall 2017
Schedule of Classes (https://classes.cornell.edu/)

INFO 6120 - Ubiquitous Computing (3 Credits)
This course will introduce students to the field of Ubiquitous Computing - a multidisciplinary research area that draws from Machine Learning, Machine Perception, Signal Processing, Human Computer Interaction, as well as psychology and sociology. Class discussions and hands on exercises will be the focus of this class with a few formal lectures. Discussions will highlight the various challenges in data collection, representation and tractability of models, and evaluation. We will brain-storm ideas on how future research can go about tackling some of these challenges. Students will be required to lead and critique papers. Everyone will take turns presenting papers and in leading discussions. Participation in discussions will be evaluated as well as mini projects assignments during the term and an end of term final project.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 6125 - Non-Ideal Algorithmic Fairness (3 Credits)
Crosslisted with CS 6125
This seminar course will explore algorithmic fairness through a non-ideal lens. Rather than imagining what algorithmic fairness should look like in an ideal world, we will explore what the research tells us it looks like today, and what can be done given the incentives and practical constraints of the world we are in. For instance, the “silver bullets” of algorithmic fairness are often abstract calls made to increase participation, transparency, and regulation. However, each approach faces difficulties in practice. In an era where algorithmic fairness faces resistance from many fronts, it is critical that we foreground concrete proposals in addition to abstract ideals. In doing so, we’ll also discuss the consequences of taking on a perspective that might be overly reformist at the expense of radical re-imagining, and think through whether complementarity exists.
Learning Outcomes:

- Identify the practical constraints that algorithmic fairness faces today, and pathways to overcoming them.
- Demonstrate ability to propose productive directions.
- Develop critical research paper reading and analysis skills

Schedule of Classes (https://classes.cornell.edu/)

INFO 6135 - Developing Research Agendas in HCI Engineering (3 Credits)
The focus of this course is to create a research agenda in technical HCI. We will study how people go about creating an agenda instead of individual projects. To this end, we will look at the work of recent PhD graduates, understand their contributions to technical HCI and what methods they use to validate these contributions. Beyond that, we also look at how their projects form a larger agenda and what patterns they use to develop such an agenda. In the first half of the course, we practice this by looking at recent graduates who have a complete agenda, in the second half, we move on to explore what an agenda could look like for very recent papers, including those of students taking the class.
Enrollment Information: Enrollment limited to: Cornell Tech PhD students.
Last Four Terms Offered: Spring 2025
Learning Outcomes:

- Understand types of contributions to technical HCI and related validation methods.
- Analyze research agendas in technical HCI to identify underlying patterns.
- Explore how such patterns apply to recent research papers, what should they research next?
- Demonstrate your understanding of these agendas by applying their patterns to your own research.

Schedule of Classes (https://classes.cornell.edu/)

INFO 6150 - Advanced Topic Modeling (3 Credits)
Crosslisted with CS 6788
Statistical topic models such as LDA provide a powerful tool for discovering themes in large unlabeled text corpora. They are increasingly popular in a wide range of fields, both as a data-driven alternative to manual document coding methods, and also as an example of a difficult but tractable problem in statistical inference. This course will cover Bayesian model construction, inference techniques, evaluation, and applications beyond text such as community detection in networks and population admixture in genetics.
Prerequisites: familiarity with Bayesian statistics and probabilistic modeling.
Enrollment Information: Enrollment limited to: graduate students or seniors.
Last Four Terms Offered: Spring 2021, Fall 2018, Fall 2016, Fall 2014
Schedule of Classes (https://classes.cornell.edu/)

INFO 6210 - Information, Technology, and Society (3 Credits)
Crosslisted with COMM 6211
This course explores key theoretical and methodological approaches underlying the study of information, technology, and society, focused primarily (though not exclusively) on social science approaches-drawing from disciplines like sociology, communications, history, science & technology studies, and others. The course is designed to be rigorous and to prepare students to make their own analytically and theoretically sound contributions to scholarship about information, technology, and society.
Enrollment Information: Enrollment limited to: graduate students.
Last Four Terms Offered: Fall 2022, Fall 2019, Spring 2018, Spring 2017
Schedule of Classes (https://classes.cornell.edu/)

INFO 6220 - Networks II: Market Design (3 Credits)
Networks II builds on its prerequisite course and continues to examine how each of the computing, economic, sociological and natural worlds are connected and how the structure of these connections affects these worlds. In this course, we will construct mathematical models for and analyze networked settings, allowing us to both make predictions about behavior in such systems, as well as reason about how to design such systems to exhibit some desirable behavior. Throughout, we will draw on real-world examples such as social networks, peer-to-peer filesharing, Internet markets, and crowdsourcing, that illustrate these phenomena.
Prerequisites: INFO 2040, CS 2800 or equivalent.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 6309 - Design Research (3 Credits)
This course is designed to provide PhD students with an understanding of research into, through, and for design. The course will cover readings across literature in human-computer interaction, engineering, education, and architecture. Topics include design theory, design as a research method, empirical studies of designing, theory building in design, and history and philosophy of design.
Last Four Terms Offered: Spring 2024, Spring 2021, Spring 2020, Spring 2018
Schedule of Classes (https://classes.cornell.edu/)

INFO 6310 - Behavior and Information Technology (3 Credits)
Crosslisted with COMM 6310
This course explores the behavioral foundations of communication technology and the information sciences, and the ways in which theories and methods from the behavioral sciences play a role in understanding people's use of, access to and interactions with information and communication technologies.
Enrollment Information: Enrollment limited to: graduate students or permission of instructor.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 6350 - Text Mining History and Literature (3 Credits)
The course will introduce methods for computer-assisted analysis of historical text collections. It will cover corpus curation, representing text as data, building statistical models from text, and interpreting results. Statistical and programming concepts will be introduced as needed. The class will also reflect on how computational methods fit with existing practices in the humanities, and how we can use models as complements to our own interpretations. Following the course, students will be able to assist faculty in computer-assisted scholarship.
Prerequisites: INFO 6010 or permission of instructor.
Enrollment Information: Primarily for: students with programming and data science experience, or permission of instructor required.
Last Four Terms Offered: Fall 2024, Fall 2023, Spring 2022, Fall 2020
Schedule of Classes (https://classes.cornell.edu/)

INFO 6400 - Qualitative User Research and Design Methods (3 Credits)
This upper-level course provides an in-depth understanding of and experience with advanced concepts and techniques for researching, ideating, critiquing, designing, prototyping, and evaluating interactive technologies intended for people to use and incorporate in their lives. The course focuses on advanced user research and design methods.
Prerequisites: INFO 3450/COMM 3450/INFO 5355 or permission of instructor.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023
Learning Outcomes:

- Students will be able to develop in-depth understanding of human-computer interaction theory, design, and research through readings, class discussions, and weekly workshops.

Schedule of Classes (https://classes.cornell.edu/)

INFO 6410 - HCI and Design (3 Credits)
Crosslisted with CS 5682
Human-Computer Interaction (HCI) and design theory and techniques. Methods for designing, prototyping, and evaluating user interfaces. Basics of visual design, graphic design, and interaction design. Understanding human capabilities, interface technology, interface design methods, prototyping tools, and interface evaluation tools and techniques.
Enrollment Information: Enrollment limited to: Cornell Tech students.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 6420 - Re-Designing Robots (3 Credits)
"Re-Designing Robots" is a studio-based graduate course focused on building and deploying robots in real-world settings such as homes, workplaces, and public spaces. Students will work individually and collaboratively in interdisciplinary teams, incorporating perspectives from engineering, computer science, art, design, and social sciences. The course emphasizes critical examination of the societal roles and ethical implications of robotic technologies, encouraging students to ask not just how robots can function better, but how they can meaningfully and responsibly enhance human activities. Key topics include prototyping interactive robotic systems, video interaction analysis, and hands-on experimentation with physical robot prototypes. Through immersive, hands-on projects, students will develop the expertise to thoughtfully design robots that integrate seamlessly and responsibly into everyday life.
Course Fee: Course Fee, $ 200.00. For equipment.
Last Four Terms Offered: Spring 2025, Fall 2021, Spring 2019, Spring 2017
Schedule of Classes (https://classes.cornell.edu/)

INFO 6450 - Computer-Mediated Communication (3 Credits)
Crosslisted with COMM 6450
Focuses on reading and evaluating the theories and research methodologies used to investigate communication via computer systems. Assignments include student collaborations using electronic conferencing and other advanced communication technologies, as well as reflections on and evaluations of these collaborations in light of current theories and research findings. Topics include virtual teams, videoconferencing, and others as they emerge.
Enrollment Information: Enrollment limited to: graduate students or permission of instructor.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Students will gain a theoretical understanding of the field of CMC and become familiar with both common and novel CMC tools, though readings and in depth class discussion of key articles in the field.
- Students will gain an understanding of how CMC researchers conduct their research, though a series of mini projects that require them to examine CMC phenomena and write short reports on them.
- Students will gain an in depth understanding of a selected area of CMC, through their team project and class presentation.

Schedule of Classes (https://classes.cornell.edu/)

INFO 6455 - Algorithmic Fairness Seminar (1 Credit)
This seminar will showcase a variety of methods for and applications of algorithmic fairness research across disciplines – from machine learning and statistics, to public health and public policy – and will instruct on both (a) reading out-of-discipline papers and (b) writing for a multidisciplinary audience. Weekly guest lectures will each cover a different topic in algorithmic fairness, and will involve guided paper discussions and question-answering sessions with invited academic researchers.
Learning Outcomes:

- Define what “algorithmic fairness” entails across disciplines.
- Solidify their ability to read algorithmic fairness papers, and understand relevant methods used to study fairness, across both qualitative and quantitative fields.
- Demonstrate oral communication skills by fostering dialogue with academic researchers in the algorithmic fairness field.

Schedule of Classes (https://classes.cornell.edu/)

INFO 6490 - Social Behavior and Technology (3 Credits)
Crosslisted with COMM 6490
This course explores personal connections in the digital age, and how information and communication technologies impact our lives and relationships. It focuses on how people manage interactions and identities, develop and maintain relationships, accomplish social goals, create shared meanings, and engage in collaboration and conflict in social media. Emphasis will be placed on how current thinking in relational communication can explain and anticipate interpersonal dynamics on the Internet, but also on how online behaviors may challenge traditional principles of human communication. A major part of the course is a semester-long research project in which students working in small groups design, run, and present their own empirical study of personal relationships and technology.
Prerequisites: COMM 2820, COMM 2450, and INFO 2450.
Last Four Terms Offered: Spring 2022
Learning Outcomes:

- Students will be able to examine and extend basic principles of interpersonal communication to human behavior and relationships on the Internet.
- Students will be able to explore the nature and role of perception of self and others in computer-mediated interactions.
- Students will be able to investigate how interpersonal relationships are affected by information and communication technologies.
- Students will be able to form an awareness of research methods that are used to study social behavior on the Internet.

Schedule of Classes (https://classes.cornell.edu/)

INFO 6500 - Language and Technology (3 Credits)
Crosslisted with COMM 6500
Examines how new communication technologies affect the way we produce and understand language and modify interaction with one another. Focuses on the collaborative nature of language use and how Internet technologies affect the joint activities of speakers and listeners during the construction of meaning in conversation. The graduate students are expected to take the lead on the small group class projects, in terms of identifying research questions, working out the method, and performing statistics. This requires mentorship of the undergraduates on their team. The graduate students are also expected to submit more in depth analyses of the readings for their individual paper assignments.
Prerequisites: COMM 2450/INFO 2450 or permission of instructor.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2017
Learning Outcomes:

- Demonstrate a detailed understanding of theoretical perspectives, through careful reading and discussion of class materials.
- Apply theories and methods from class to research projects.
- Demonstrate organizational and collaborative skills through group research projects.

Schedule of Classes (https://classes.cornell.edu/)

INFO 6510 - Accessibility, Disability, and Technology (3 Credits)
This seminar course will introduce students to research related to technology and disability. This includes user research involving people with disabilities, technology design to address the unique challenges experienced by people with disabilities, and ethical and historical issues related to these areas.
Enrollment Information: Enrollment limited to: Cornell Tech PhD Students.
Last Four Terms Offered: Fall 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 6520 - Human Computer Interaction Graduate Studio (4 Credits)
This course will introduce User Experience design technique taught in a Studio. Students will work on a series of design studies and a semester long design project exploring advanced User Interaction design techniques. The course is designed to help students start a design portfolio to reflect their work.
Last Four Terms Offered: Fall 2024, Spring 2024, Fall 2023, Fall 2022
Schedule of Classes (https://classes.cornell.edu/)

INFO 6561 - Technologies of Valuation (3 Credits)
Crosslisted with STS 6561
Valuation is a pervasive feature of contemporary life. Professors, start-ups, immigrants, intelligence, insurance premiums, and human lives: almost everything these days is subject to some form of more or less methodical assessment. This seminar examines valuation as a socio-technical phenomenon and asks how value and values are established, co-produced, maintained, subverted, institutionalized, and resisted. Through a mix of reading, writing, and activities, we shall engage with theoretical, historical, and contemporary studies of (e)valuation in science & technology studies (STS), but also draw on related areas like economic sociology, critical accounting studies, anthropology, and information science. Taken together, these ideas provide a powerful lens for analyzing what counts in cultures, organizations, and other forms of social life.
Last Four Terms Offered: Spring 2025, Spring 2016, Spring 2015
Schedule of Classes (https://classes.cornell.edu/)

INFO 6600 - Technology for Underserved Communities (3 Credits)
This course examines the design, deployment, and adoption of computing technologies that aim to improve the lives of underserved populations in low-resource environments. Through discussions of case studies from the US and across the world, we will study how computing technologies are used in different global development domains, such as agriculture, finance, health, education, civic engagement. We will also explore many of the big debates in the field of ICTD through reading and discussing seminal papers, including how to approach and measure success, how to consider failure, what constitutes 'good' research, how to broach the 'digital divide'. The course will enrich students' foundational knowledge and information about current research in ICTD, and will better equip them to create and evaluate computing technologies for people in low-resource environments.
Last Four Terms Offered: Spring 2023, Spring 2022, Spring 2021, Spring 2020
Schedule of Classes (https://classes.cornell.edu/)

INFO 6610 - Text and Networks in Social Science Research (3 Credits)
Crosslisted with HD 6610, GOVT 6619, SOC 6610
This is a course on networks and text in quantitative social science. The course will cover published research using text and social network data, focusing on health, politics, and everyday life, and it will introduce methods and approaches for incorporating high-dimensional data into familiar research designs. Students will evaluate past studies and propose original research.
Prerequisites: HD 5760 or GOVT 6029 or SOC 6020 or equivalent.Recommended prerequisite: some R or similar (e.g., python) programming experience.
Distribution Requirements: (SBA-HE)
Last Four Terms Offered: Fall 2024, Fall 2023, Spring 2023, Fall 2021
Learning Outcomes:

- Learn to critically evaluate empirical research that uses text as data or social network analysis.
- Connect fundamentals of research design to high-dimensional data analysis.
- Develop verbal and written skills via in-class discussion, presentations, and written assignments.
- Learn to represent complex relationships quantitatively and conduct high-dimensional data analyses using statistical programming.
- Learn methods for avoiding over-fitting in high-dimensional data analysis.

Schedule of Classes (https://classes.cornell.edu/)

INFO 6620 - Social Research Design and Method (3 Credits)
This graduate seminar is intended to acquaint students with critical issues in designing and executing social research. The goal of the course is to equip students to make their own analytically sound contributions to social research about technology, while critically considering their own roles as social scientists. Among the topics the course is likely to cover are: formulating good research questions and fitting appropriate methods to them; practical aspects of data collection; forms of validity; critical assessment of constructs and classifications; the roles of failure and surprise in social research; and positionality and the researcher's relationship to social policy.
Enrollment Information: Enrollment limited to: INFO Ph.D. students or instructor permission.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2020
Schedule of Classes (https://classes.cornell.edu/)

INFO 6702 - Topics in Computational Sustainability (4 Credits)
Crosslisted with CS 6702
Last Four Terms Offered: Fall 2022, Spring 2013, Spring 2011, Spring 2010
Schedule of Classes (https://classes.cornell.edu/)

INFO 6742 - Natural Language Processing and Social Interaction (3 Credits)
Crosslisted with CS 6742
More and more of life is now manifested online, and many of the digital traces that are left by human activity are increasingly recorded in natural-language format. This research-oriented course examines the opportunities for natural language processing to contribute to the analysis and facilitation of socially embedded processes. Possible topics include sentiment analysis, learning social-network structure, analysis of text in political or legal domains, review aggregation systems, analysis of online conversations, and text categorization with respect to psychological categories.
Prerequisites: CS 3110 or equivalent programming experience, a course in artificial intelligence or any relevant subfield (e.g., NLP, information retrieval, machine learning).
Enrollment Information: Enrollment limited to: Ph.D. and MS students.
Last Four Terms Offered: Fall 2024, Spring 2024, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 6751 - Causal Inference in Observational Settings (3 Credits)
This course will equip students to conduct causal research, with an emphasis on observational settings. The course focuses on defining a causal question, defending causal assumptions, and estimating the target quantity. These steps will be discussed in the potential outcomes framework and the structural causal modeling framework. A theme of the course is that one should design an observational study to mimic a hypothetical randomized experiment. Students will leave the course prepared to evaluate the credibility of causal claims, answer causal questions in their own research, and engage with new methods for causal inference.
Prerequisites: familiarity with basic probability and statistics (e.g., random variables, expectation, confidence intervals).
Last Four Terms Offered: Fall 2022
Learning Outcomes:

- Students will learn to evaluate the credibility of causal claims.
- Students will learn to answer causal questions in their own research.
- Students will learn to engage with new methods for causal inference.

Schedule of Classes (https://classes.cornell.edu/)

INFO 6755 - Mobile Human Robot Interaction Design (3 Credits)
Crosslisted with CS 6755
Robot and automated systems often need to move in and around people. This technical and human-centered course surveys current physical, computation and sensing technologies that make mobile human robot interaction possible, and delves into key research problems in interaction, human modelling, and repair which are needed to tackle the grand challenge of mobile HRI. As part of this course, students will build working prototypes of mobile robots, and deploy them for study in human environments. The 5000-level version of this course focuses on platform development; the 6000-level version of this course focuses on the production of human participant research studies using mobile HRI.
Prerequisites: proficiency in Python.
Enrollment Information: Enrollment limited to: PhD students.
Last Four Terms Offered: Spring 2023
Learning Outcomes:

- Identify key hardware, software and modelling components for mobile robot systems.
- Analyze human behavior to enable safe and socially appropriate mobile robot response.
- Demonstrate capability to develop and test mobile robot systems.

Schedule of Classes (https://classes.cornell.edu/)

INFO 6850 - The Structure of Information Networks (4 Credits)
Crosslisted with CS 6850
Information networks such as the World Wide Web are characterized by the interplay between heterogeneous content and a complex underlying link structure. This course covers recent research on algorithms for analyzing such networks and models that abstract their basic properties. Topics include combinatorial and probabilistic techniques for link analysis, centralized and decentralized search algorithms, generative models for networks, and connections with work in the areas of social networks and citation analysis.
Prerequisites: CS 4820.
Last Four Terms Offered: Fall 2024, Fall 2023, Spring 2023, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

INFO 6940 - Special Topics in Information Science (1-4 Credits)
Study of topics not currently covered in INFO offerings, as determined by faculty and student interest.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 6960 - Data Science for Global Development (3 Credits)
This seminar will showcase a variety of methods common to global development research across disciplines - from machine learning to statistics to economics to public health - and will instruct on both (a) reading out-of-discipline papers and (b) writing for a multidisciplinary audience. Weekly lectures will each focus on a different sustainable development goal through an academic lens, and will include guided paper discussions, student presentations, and featured guest lecturers spanning academia, non-profits, and NGOs.
Enrollment Information: Enrollment limited to: graduate students.
Exploratory Studies: (CU-ITL)

Last Four Terms Offered: Spring 2023
Learning Outcomes:

- Solidify students' ability to read papers and understand data science methods used to study development across fields (including computer science, economics, public health, and sociology literature).
- Increase students' presentation skills of advanced computational research methods across disciplines.
- Demonstrate students' written communication of data science research for interdisciplinary audiences.

Schedule of Classes (https://classes.cornell.edu/)

INFO 7060 - Digital Life Research Seminar (1 Credit)
Crosslisted with LAW 7179
This seminar focuses on the societal perspectives on digital technology. Speakers will come from a range of disciplines including computer science, data science, engineering, OR, humanities, social sciences, law, and policy and will present work in progress that considers ethical and political questions related to the design, development, and deployment of digital, computational, and information systems and devices. Topics include accountable algorithms, bias in machine learning, AI and the workplace, privacy, and cybersecurity.
Last Four Terms Offered: Fall 2024, Spring 2024, Fall 2023, Spring 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 7090 - IS Colloquium (1 Credit)
For staff, visitors, and graduate students interested in information science.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

INFO 7492 - Special Topics in Computer Systems (2 Credits)
Crosslisted with CS 7492
PhD-level seminar on special topics in computer systems.
Prerequisites: graduate-level preparation in computer systems or permission of instructor.
Last Four Terms Offered: Fall 2020
Learning Outcomes:

- Understand state-of-the-art techniques, tools, and technologies from multiple perspectives.
- Read and analyze current research papers.
- Where relevant, identify, analyze, and evaluate ethical, legal, and policy dimensions of technologies under study.

Schedule of Classes (https://classes.cornell.edu/)

INFO 7900 - Independent Research (1-12 Credits)
Independent research for MPS students and pre-A exam Ph.D. Students.
Last Four Terms Offered: Summer 2025, Spring 2025, Fall 2024, Spring 2024
Schedule of Classes (https://classes.cornell.edu/)

INFO 7905 - IS PhD Professionalization Seminar (1.5 Credits)
This seminar is designed to help orient incoming Information Science PhD students to intellectual, professional, and practical aspects of getting a PhD in information science at Cornell. This includes helping students become more familiar with people, projects, and useful resources in information science and related disciplines at Cornell; developing a sense of the broader information science field and related academic communities; and to support cohort-building among incoming students.
Enrollment Information: Enrollment limited to: Information Science Ph.D. students or permission of the instructor.
Last Four Terms Offered: Spring 2025, Fall 2023, Fall 2022, Fall 2020
Schedule of Classes (https://classes.cornell.edu/)

INFO 9900 - Thesis Research (1-15 Credits)
Thesis research for post-A exam Ph.D. Students.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)