School of Information

Overview

The School of Information is a graduate research and education community committed to expanding access to information and to improving its usability, reliability, and credibility while preserving security and privacy. This requires the insights of scholars from diverse fields — information and computer science, design, social sciences, management, law, and policy.

Roughly 120 graduate students and two dozen faculty members are based on the UC Berkeley campus, in UC Berkeley's historic South Hall, with another 1100 students online. Together they form a multi-disciplinary collective of scholars and practitioners collaborating on initiatives at the intersection of people, information, and technology.

The I School offers three professional master's degrees and an academic doctoral degree. The MIMS program (http://guide.berkeley.edu/archive/2023-24/graduate/degree-programs/information-management-systems/) trains students for careers as information professionals and emphasizes small classes and project-based learning. The MIDS program (http://guide.berkeley.edu/archive/2023-24/graduate/degree-programs/information-data-science/) trains data scientists to manage and analyze the coming onslaught of big data, in a unique high-touch online degree. The MICS program (http://guide.berkeley.edu/archive/2023-24/graduate/degree-programs/information-cybersecurity/) prepares cybersecurity leaders with the technical skills and contextual knowledge necessary to develop solutions for complex cybersecurity challenges. The PhD program (http://guide.berkeley.edu/archive/2023-24/graduate/degree-programs/information-management-systems-phd/) equips scholars to develop solutions and shape policies that influence how people seek, use, and share information.

History

The UC Berkeley School of Information was created in 1994 to address one of society's most compelling challenges: enabling people to create, find, manipulate, share, store, and use information in myriad forms.

Originally known as the School of Information Management and Systems (SIMS), this research-and-learning enterprise became the School of Information in 2006. The I School traces its roots to the 1920s, when UC Berkeley founded its School of Librarianship, ensuring universal access to information and educating "knowledge" professionals well before the age of the Internet. In 1976 the School of Librarianship became the School of Library and Information Studies.

The I School proudly carries forward its library school heritage through its alumni, and through an enduring commitment to making information accessible, useful, and relevant.

Undergraduate Program

There is no undergraduate program offered by the School of Information. However, undergraduate courses are offered on occasion. Consult the current semester's course schedule and these instructions for getting into I School classes (https://www.ischool.berkeley.edu/courses/take-a-class/) for more information.

Graduate Programs

Information and Cybersecurity: MICS (http://guide.berkeley.edu/archive/2023-24/graduate/degree-programs/information-cybersecurity/)
Information and Data Science: MIDS (http://guide.berkeley.edu/archive/2023-24/graduate/degree-programs/information-data-science/)
Information Management and Systems: MIMS (http://guide.berkeley.edu/archive/2023-24/graduate/degree-programs/information-management-systems/)
Information Science: PhD (http://guide.berkeley.edu/archive/2023-24/graduate/degree-programs/information-management-systems-phd/)

Information

Expand all course descriptions [+]Collapse all course descriptions [-]

INFO C8 Foundations of Data Science 4 Units

Terms offered: Fall 2024, Summer 2024 8 Week Session, Spring 2024, Fall 2023, Spring 2023, Fall 2022, Spring 2022, Fall 2021, Summer 2021 8 Week Session, Fall 2020
Foundations of data science from three perspectives: inferential thinking, computational thinking, and real-world relevance. Given data arising from some real-world phenomenon, how does one analyze that data so as to understand that phenomenon? The course teaches critical concepts and skills in computer programming and statistical inference, in conjunction with hands-on analysis of real-world datasets, including economic data, document collections, geographical data, and social networks. It delves into social and legal issues surrounding data analysis, including issues of privacy and data ownership.
Foundations of Data Science: Read More [+]

Rules & Requirements

Prerequisites: This course may be taken on its own, but students are encouraged to take it concurrently with a data science connector course (numbered 88 in a range of departments)

Credit Restrictions: Students will receive no credit for DATA C8\COMPSCI C8\INFO C8\STAT C8 after completing COMPSCI 8, or DATA 8. A deficient grade in DATA C8\COMPSCI C8\INFO C8\STAT C8 may be removed by taking COMPSCI 8, COMPSCI 8, or DATA 8.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Summer: 8 weeks - 6 hours of lecture and 4 hours of laboratory per week

Additional Details

Subject/Course Level: Information/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Formerly known as: Computer Science C8/Statistics C8/Information C8

Also listed as: COMPSCI C8/DATA C8/STAT C8

Foundations of Data Science: Read Less [-]

INFO 98 Directed Group Study for Lower Division Undergraduates 1 - 4 Units

Terms offered: Fall 2022, Spring 2022, Fall 2021
Lectures and small group discussions focusing on topics of interest, varying from semester to semester.
Directed Group Study for Lower Division Undergraduates: Read More [+]

Rules & Requirements

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of directed group study per week

Additional Details

Subject/Course Level: Information/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

Directed Group Study for Lower Division Undergraduates: Read Less [-]

INFO 101 Introduction to Information Studies 3 Units

Terms offered: Fall 2022
This class introduces key issues, concepts, and methodologies of information studies. Students consider questions such as: what does it mean to live in an information society? What are the human and social aspects of the design of technology? How do policy, law, and other social forces affect this? How can technology and data be designed for social good? Students will become familiar with the kinds of research and multidisciplinary methods used in information studies. Students leave the course with tools to understand the politics, economics, and culture of information systems; a nuanced understanding of contemporary case studies involving technological systems in society; and a solid foundation for further study in information science.
Introduction to Information Studies: Read More [+]

Objectives & Outcomes

Student Learning Outcomes: Be introduced to the technology industry, technology design, human-computer interaction, and ‘the sociotechnical’
Establish a foundation for succeeding in additional upper-division INFO courses.
Gain a nuanced understanding of contemporary case studies involving technological systems in society
Learn tools to understand the politics, economics, and culture of information systems

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Instructor: Ames

Formerly known as: Information Systems and Management 101

Introduction to Information Studies: Read Less [-]

INFO 103 History of Information 4 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022
Surveying history through the lens of information and information through the lens of history, this course looks across time to consider what might distinguish ours as "the information age" and what that description implies about the role of "information technology" across time. We will select moments in societies' development of information production, circulation, consumption, and storage from the earliest writing and numbering systems to the world of Social Media. In every instance, we'll be concerned with what and when, but also with how and why. Throughout we will keep returning to questions about how information-technological developments affect society and vice versa?
History of Information: Read More [+]

Rules & Requirements

Prerequisites: Upper level undergraduates

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Information/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Duguid

Formerly known as: Information C103/Cognitive Science C103/History C192/Media Studies C104C

History of Information: Read Less [-]

INFO 114 User Experience Research 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022
Methods and concepts of creating design requirements and evaluating prototypes and existing systems. Emphasis on computer-based systems, including mobile system and ubiquitous computing, but may be suitable for students interested in other domains of design for end-users. Includes quantitative and qualitative methods as applied to design, usually for short-term term studies intended to provide guidance for designers.
User Experience Research: Read More [+]

Rules & Requirements

Credit Restrictions: Students will receive no credit for 114 after taking 214.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Summer: 10 weeks - 4.5 hours of lecture per week

Additional Details

Subject/Course Level: Information/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

User Experience Research: Read Less [-]

INFO 134 Information Technology Economics, Strategy, and Policy 3 Units

Terms offered: Spring 2024, Spring 2022, Spring 2021
This course applies economic tools and principles, including game theory, industrial organization, information economics, and behavioral economics, to analyze business strategies and public policy issues surrounding information technologies and IT industries. Topics include: economics of information goods, services, and platforms; economics of information and asymmetric information; economics of artificial intelligence, cybersecurity, data privacy, and peer production; strategic pricing; strategic complements and substitutes; competition and antitrust; Internet industry structure and regulation; network cascades, network formation, and network structure.
Information Technology Economics, Strategy, and Policy: Read More [+]
Rules & Requirements

Prerequisites: Senior standing

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Instructor: Chuang

Information Technology Economics, Strategy, and Policy: Read Less [-]

INFO 153A Front-End Web Architecture 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022
This course is a survey of technologies that power the user interfaces of web applications on a variety of devices today, including desktop, mobile, and tablet devices. This course will delve into some of the core Front-End languages and frameworks (HTML/CSS/JS/React/Redux), as well as the underlying technologies enable web applications (HTTP, URI, JSON). The goal of this course is to provide an overview of the technical issues surrounding user interfaces powered by the web today, and to provide a solid and comprehensive perspective of the Web's constantly evolving landscape.
Front-End Web Architecture: Read More [+]
Rules & Requirements

Prerequisites: COMPSCI 61A. Strong programming skills

Credit Restrictions: Students will receive no credit for INFO 153A after completing INFO 253A.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of laboratory per week

Additional Details

Subject/Course Level: Information/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Front-End Web Architecture: Read Less [-]

INFO 153B Back-End Web Architecture 3 Units

Terms offered: Spring 2024, Spring 2023
This course is a survey of web technologies that are used to build back-end systems that enable rich web applications. Utilizing technologies such as Python, FastAPI, Docker, RDBMS/NoSQL databases, and Celery/Redis, this class aims to cover the foundational concepts that drive the web today. This class focuses on building APIs using microservices that power everything from content management systems to data engineering pipelines that provide insights by processing large amounts of data. The goal of this course is to provide an overview of the technical issues surrounding back-end systems today and to provide a solid and comprehensive perspective of the web’s constantly evolving landscape.
Back-End Web Architecture: Read More [+]
Rules & Requirements

Prerequisites: COMPSCI 61A and COMPSCI 61B. Strong Programming Skills

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of laboratory per week

Additional Details

Subject/Course Level: Information/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Back-End Web Architecture: Read Less [-]

INFO 159 Natural Language Processing 4 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022
This course introduces students to natural language processing and exposes them to the variety of methods available for reasoning about text in computational systems. NLP is deeply interdisciplinary, drawing on both linguistics and computer science, and helps drive much contemporary work in text analysis (as used in computational social science, the digital humanities, and computational journalism). We will focus on major algorithms used in NLP for various applications (part-of-speech tagging, parsing, coreference resolution, machine translation) and on the linguistic phenomena those algorithms attempt to model. Students will implement algorithms and create linguistically annotated data on which those algorithms depend.
Natural Language Processing: Read More [+]
Rules & Requirements

Prerequisites: COMPSCI 61B; COMPSCI 70, COMPSCI C100 / STAT C100 / DATA C100, MATH 55, STAT 134 or STAT C140 / DATA C140; strong programming skills

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Bamman

Natural Language Processing: Read Less [-]

INFO 188 Behind the Data: Humans and Values 3 Units

Terms offered: Fall 2024, Fall 2022, Fall 2021
This course blends social and historical perspectives on data with ethics, law, policy, and case examples to help students understand current ethical and legal issues in data science and machine learning. Legal, ethical, and policy-related concepts addressed include: research ethics; privacy and surveillance; bias and discrimination; and oversight and accountability. These issues will be addressed throughout the lifecycle of data--from collection to storage to analysis and application. The course emphasizes strategies, processes, and tools for attending to ethical and legal issues in data science work. Course assignments emphasize researcher and practitioner reflexivity, allowing students to explore their own social and ethical commitments.
Behind the Data: Humans and Values: Read More [+]
Objectives & Outcomes

Student Learning Outcomes: Critically assess one's own work and education in data science
Identify and articulate basic ethical and policy frameworks
Understand the relationship between one's own work and ethical frameworks and legal obligations

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Mulligan

Behind the Data: Humans and Values: Read Less [-]

INFO 190 Special Topics in Information 1 - 3 Units

Terms offered: Spring 2024, Fall 2020, Fall 2019
A seminar focusing on topics of current interest. Topics will vary. A seminar paper will be required. Open to students from other departments.
Special Topics in Information: Read More [+]
Rules & Requirements

Prerequisites: Consent of instructor

Repeat rules: Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1-3 hours of seminar per week

Additional Details

Subject/Course Level: Information/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Special Topics in Information: Read Less [-]

INFO 198 Directed Group Study for Advanced Undergraduates 1 - 4 Units

Terms offered: Fall 2023, Spring 2023, Spring 2015
Directed Group Study for Advanced Undergraduates: Read More [+]
Rules & Requirements

Prerequisites: Consent of instructor

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of directed group study per week

Additional Details

Subject/Course Level: Information/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

Directed Group Study for Advanced Undergraduates: Read Less [-]

INFO 199 Individual Study 1 - 4 Units

Terms offered: Fall 2023, Spring 2023, Spring 2016
Individual study of topics in information management and systems under faculty supervision.
Individual Study: Read More [+]
Rules & Requirements

Credit Restrictions: Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of independent study per week

Additional Details

Subject/Course Level: Information/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

Individual Study: Read Less [-]

INFO 201 Research Design and Applications for Data and Analysis 3 Units

Terms offered: Fall 2024, Spring 2024, Fall 2023
Introduces the data sciences landscape, with a particular focus on learning data science techniques to uncover and answer the questions students will encounter in industry. Lectures, readings, discussions, and assignments will teach how to apply disciplined, creative methods to ask better questions, gather data, interpret results, and convey findings to various audiences. The emphasis throughout is on making practical contributions to real decisions that organizations will and should make. Course must be taken for a letter grade to fulfill degree requirements.
Research Design and Applications for Data and Analysis: Read More [+]
Hours & Format

Fall and/or spring: 15 weeks - 1.5 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Research Design and Applications for Data and Analysis: Read Less [-]

INFO 202 Information Organization and Retrieval 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022
This course introduces the intellectual foundations of information organization and retrieval: conceptual modeling, semantic representation, vocabulary and metadata design, classification, and standardization, as well as information retrieval practices, technology, and applications, including computational processes for analyzing information in both textual and non-textual formats.
Information Organization and Retrieval: Read More [+]
Rules & Requirements

Prerequisites: Students should have a working knowledge of the Python programming language

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Information Organization and Retrieval: Read Less [-]

INFO 203 Social Issues of Information 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022
This course is designed to be an introduction to the topics and issues associated with information and information technology and its role in society. Throughout the semester we will consider both the consequence and impact of technologies on social groups and on social interaction and how society defines and shapes the technologies that are produced. Students will be exposed to a broad range of applied and practical problems, theoretical issues, as well as methods used in social scientific analysis. The four sections of the course are: 1) theories of technology in society, 2) information technology in workplaces 3) automation vs. humans, and 4) networked sociability.
Social Issues of Information: Read More [+]
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Social Issues of Information: Read Less [-]

INFO 205 Information Law and Policy 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022
This course uses examples from various commercial domains—retail, health, credit, entertainment, social media, and biosensing/quantified self—to explore legal and ethical issues including freedom of expression, privacy, research ethics, consumer protection, information and cybersecurity, and copyright. The class emphasizes how existing legal and policy frameworks constrain, inform, and enable the architecture, interfaces, data practices, and consumer facing policies and documentation of such offerings; and, fosters reflection on the ethical impact of information and communication technologies and the role of information professionals in legal and ethical work.
Information Law and Policy: Read More [+]
Rules & Requirements

Prerequisites: Consent of instructor required for nonmajors

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Mulligan

Information Law and Policy: Read Less [-]

INFO 206A Introduction to Programming and Computation 2 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022
This course introduces the basics of computer programming that are essential for those interested in computer science, data science, and information management. Students will write their own interactive programs (in Python) to analyze data, process text, draw graphics, manipulate images, and simulate physical systems. Problem decomposition, program efficiency, and good programming style are emphasized throughout the course.
Introduction to Programming and Computation: Read More [+]
Hours & Format

Fall and/or spring: 7.5 weeks - 4 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Farid

Introduction to Programming and Computation: Read Less [-]

INFO 206B Introduction to Data Structures and Analytics 2 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022
The ability to represent, manipulate, and analyze structured data sets is foundational to the modern practice of data science. This course introduces students to the fundamentals of data structures and data analysis (in Python). Best practices for writing code are emphasized throughout the course. This course forms the second half of a sequence that begins with INFO 106. It may also be taken as a stand-alone course by any student that has sufficient Python experience.
Introduction to Data Structures and Analytics: Read More [+]
Rules & Requirements

Prerequisites: INFO 206A or equivalent, or permission of instructor

Credit Restrictions: Course must be completed for a letter grade to fulfill degree requirements.

Hours & Format

Fall and/or spring: 7.5 weeks - 4 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Farid

Formerly known as: Information 206

Introduction to Data Structures and Analytics: Read Less [-]

INFO 213 Introduction to User Experience Design 4 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022
This course will provide an introduction to the field of Human-Computer Interaction (HCI). Students will learn to apply design thinking to User Experience (UX) design, prototyping, & evaluation. The course will also cover special topic areas within HCI.
Introduction to User Experience Design: Read More [+]

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Introduction to User Experience Design: Read Less [-]

INFO 214 User Experience Research 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022
This course addresses concepts and methods of user experience research, from understanding and identifying needs, to evaluating concepts and designs, to assessing the usability of products and solutions. We emphasize methods of collecting and interpreting qualitative data about user activities, working both individually and in teams, and translating them into design decisions. Students gain hands-on practice with observation, interview, survey, focus groups, and expert review. Team activities and group work are required during class and for most assignments. Additional topics include research in enterprise, consulting, and startup organizations, lean/agile techniques, mobile research approaches, and strategies for communicating findings.
User Experience Research: Read More [+]

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

User Experience Research: Read Less [-]

INFO 215 Product Design Studio 3 Units

Terms offered: Fall 2024, Fall 2023
This course will give participants hands-on digital product design experience oriented around current industry practice. The course will be project-based with an emphasis on iteration, practice, and critique. During the course, participants will work on a series of design projects through a full design process, including developing appropriate design deliverables, gathering feedback, and iterating on designs.
Product Design Studio: Read More [+]

Objectives & Outcomes

Course Objectives: The course objective is to provide students interested in web and mobile Product Design with skills, practice, and experience that will prepare them for careers in product design and design-related roles.

Rules & Requirements

Prerequisites: DES INV 15 or COMPSCI 160 or INFO 213 AND INFO 214; or permission of the instructor. Students can take INFO 214 and INFO 215 concurrently, but students may not drop INFO 214 and remain in INFO 215

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Formerly known as: Information Systems and Management 215

Product Design Studio: Read Less [-]

INFO 217A Human-Computer Interaction (HCI) Research 3 Units

Terms offered: Spring 2024, Fall 2021, Fall 2020
This course is a graduate-level introduction to HCI research. Students will learn to conduct
original HCI research by reading and discussing research papers while collaborating on a
semester-long research project. Each week the class will focus on a theme of HCI research and
review foundational and cutting-edge research relevant to that theme. The class will focus on the
following areas of HCI research: ubiquitous computing, social computing, critical theory, and
human-AI interaction. In addition to these research topics the class will introduce common
qualitative and quantitative methodologies in HCI research.
Human-Computer Interaction (HCI) Research: Read More [+]
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Salehi

Human-Computer Interaction (HCI) Research: Read Less [-]

INFO 218 Concepts of Information 3 Units

Terms offered: Spring 2024, Spring 2022, Spring 2020
As it's generally used, "information" is a collection of notions, rather than a single coherent concept. In this course, we'll examine conceptions of information based in information theory, philosophy, social science, economics, and history. Issues include: How compatible are these conceptions; can we talk about "information" in the abstract? What work do these various notions play in discussions of literacy, intellectual property, advertising, and the political process? And where does this leave "information studies" and "the information society"?
Concepts of Information: Read More [+]
Rules & Requirements

Prerequisites: Graduate standing

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructors: Duguid, Nunberg

Concepts of Information: Read Less [-]

INFO 225 Leadership and Management 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2021
This course focuses on the practice of leadership, collaboration, and people management in contemporary, distributed, information and technology-rich organizations. Not just for potential people managers, this course is derived from the premise that a foundation in leadership, management, and collaboration is essential for individuals in all roles, at any stage of their career. To build this foundation we will take a hybrid approach, engaging literature from disciplines such as social psychology, management, and organizational behavior, as well as leveraging case studies and practical exercises. The course will place a special emphasis on understanding and reacting to social dynamics in workplace hierarchies and teams.
Leadership and Management: Read More [+]
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Leadership and Management: Read Less [-]

INFO 231 Decisions and Algorithms 3 Units

Terms offered: Fall 2024, Spring 2013, Spring 2011
This class is for graduate students interested in getting an advanced understanding of judgments and decisions made with predictive algorithms. The course will survey the vast literature on the psychology of how people arrive at judgments and make decisions with the help of statistical information, focused mostly on experimental lab evidence from cognitive and social psychology. Then study the burgeoning evidence on how people use statistical algorithms in practice, exploring field evidence from a range of settings from criminal justice and healthcare to housing and labor markets. Special attention is paid to psychological principles that impact the effectiveness and fairness of algorithms deployed at scale.
Decisions and Algorithms: Read More [+]
Objectives & Outcomes

Course Objectives: Help students understand systematic human errors and explore potential algorithmic solutions.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Decisions and Algorithms: Read Less [-]

INFO 233 Social Psychology and Information Technology 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022
Discusses application of social psychological theory and research to information technologies and systems; we focus on sociological social psychology, which largely focuses on group processes, networks, and interpersonal relationships. Information technologies considered include software systems used on the internet such as social networks, email, and social games, as well as specific hardware technologies such as mobile devices, computers, wearables, and virtual/augmented reality devices. We examine human communication practices, through the lens of different social psychology theories, including: symbolic interaction, identity theories, social exchange theory, status construction theory, and social networks and social structure theory.
Social Psychology and Information Technology: Read More [+]
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Cheshire

Social Psychology and Information Technology: Read Less [-]

INFO 234 Information Technology Economics, Strategy, and Policy 3 Units

Terms offered: Spring 2024, Spring 2022, Spring 2021
This course applies economic tools and principles, including game theory, industrial organization, information economics, and behavioral economics, to analyze business strategies and public policy issues surrounding information technologies and IT industries. Topics include: economics of information goods, services, and platforms; economics of information and asymmetric information; economics of artificial intelligence, cybersecurity, data privacy, and peer production; strategic pricing; strategic complements and substitutes; competition and antitrust; Internet industry structure and regulation; network cascades, network formation, and network structure.
Information Technology Economics, Strategy, and Policy: Read More [+]
Objectives & Outcomes

Course Objectives:
INFO234 is a graduate level course in the school's topical area of Information Economics and Policy, and can be taken by the masters and doctoral students to satisfy their respective degree requirements.

Student Learning Outcomes:
Students will learn to identify, describe, and analyze business strategies and public policy issues of particular relevance to the information industry. Students will learn and apply economic tools and principles to analyze phenomena such as platform competition, social epidemics, and peer production, and current policy issues such as network neutrality and information privacy. Through integrated assignments and project work, the students will apply the theoretical concepts and analytic tools learned in lectures and readings to develop and evaluate a business model, product, or service of their choosing, e.g., a start-up idea they are pursuing.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Chuang

Information Technology Economics, Strategy, and Policy: Read Less [-]

INFO 239 Technology and Delegation 3 Units

Terms offered: Fall 2021, Fall 2019, Fall 2018
The introduction of technology increasingly delegates responsibility to technical actors, often reducing traditional forms of transparency and challenging traditional methods for accountability. This course explores the interaction between technical design and values including: privacy, accessibility, fairness, and freedom of expression. We will draw on literature from design, science and technology studies, computer science, law, and ethics, as well as primary sources in policy, standards and source code. We will investigate approaches to identifying the value implications of technical designs and use methods and tools for intentionally building in values at the outset.
Technology and Delegation: Read More [+]
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Mulligan

Technology and Delegation: Read Less [-]

INFO 241 Experiments and Causal Inference 3 Units

Terms offered: Fall 2024, Spring 2024, Fall 2022
This course introduces students to experimentation in data science. Particular attention is paid to the formation of causal questions, and the design and analysis of experiments to provide answers to these questions. This topic has increased considerably in importance since 1995, as researchers have learned to think creatively about how to generate data in more scientific ways, and developments in information technology has facilitated the development of better data gathering.
Experiments and Causal Inference: Read More [+]
Hours & Format

Fall and/or spring: 15 weeks - 1.5 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Experiments and Causal Inference: Read Less [-]

INFO 247 Information Visualization and Presentation 4 Units

Terms offered: Spring 2023, Spring 2022, Spring 2021
The design and presentation of digital information. Use of graphics, animation, sound, visualization software, and hypermedia in presenting information to the user. Methods of presenting complex information to enhance comprehension and analysis. Incorporation of visualization techniques into human-computer interfaces. Course must be completed for a letter grade to fulfill degree requirements.
Information Visualization and Presentation: Read More [+]
Rules & Requirements

Prerequisites: INFO 206B or knowledge of programming and data structures with consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of laboratory per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Hearst

Information Visualization and Presentation: Read Less [-]

INFO 251 Applied Machine Learning 4 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022
Provides a theoretical and practical introduction to modern techniques in applied machine learning. Covers key concepts in supervised and unsupervised machine learning, including the design of machine learning experiments, algorithms for prediction and inference, optimization, and evaluation. Students will learn functional, procedural, and statistical programming techniques for working with real-world data.
Applied Machine Learning: Read More [+]

Objectives & Outcomes

Student Learning Outcomes: •
Effectively design, execute, and critique experimental and non-experimental methods from statistics, machine learning, and econometrics.
•
Implement basic algorithms on structured and unstructured data, and evaluate the performance of these algorithms on a variety of real-world datasets.
•
Understand the difference between causal and non-causal relationships, and which situations and methods are appropriate for both forms of analysis.
•
Understand the principles, advantages, and disadvantages of different algorithms for supervised and unsupervised machine learning.

Rules & Requirements

Prerequisites: INFO 206B, or equivalent course in Python programming; INFO 271B, or equivalent graduate-level course in statistics or econometrics; or permission of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Blumenstock

Applied Machine Learning: Read Less [-]

INFO 253A Front-End Web Architecture 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022
This course is a survey of technologies that power the user interfaces of web applications on a variety of devices today, including desktop, mobile, and tablet devices. This course will delve into some of the core Front-End languages and frameworks (HTML/CSS/JS/React/Redux), as well as the underlying technologies enable web applications (HTTP, URI, JSON). The goal of this course is to provide an overview of the technical issues surrounding user interfaces powered by the web today, and to provide a solid and comprehensive perspective of the Web's constantly evolving landscape.
Front-End Web Architecture: Read More [+]

Rules & Requirements

Prerequisites: Introductory programming

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of laboratory per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Formerly known as: Information 253

Front-End Web Architecture: Read Less [-]

INFO 253B Back-End Web Architecture 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022
This course is a survey of web technologies that are used to build back-end systems that enable rich web applications. Utilizing technologies such as Python, Flask, Docker, RDBMS/NoSQL databases, and Spark, this class aims to cover the foundational concepts that drive the web today. This class focuses on building APIs using micro-services that power everything from content management systems to data engineering pipelines that provide insights by processing large amounts of data. The goal of this course is to provide an overview of the technical issues surrounding back-end systems today, and to provide a solid and comprehensive perspective of the web's constantly evolving landscape.
Back-End Web Architecture: Read More [+]

Rules & Requirements

Prerequisites: Introductory programming

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of laboratory per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Back-End Web Architecture: Read Less [-]

INFO 255 Privacy Engineering 3 Units

Terms offered: Spring 2024, Spring 2023
The course overviews a broad number of paradigms of privacy from a technical point of view. The course is designed to assist system engineers and information systems professionals in getting familiar with the subject of privacy engineering and train them in implementing those mechanisms. In addition, the course is designed to coach those professionals to critically think about the strengths and weaknesses of the different privacy paradigms. These skills are important for cybersecurity professionals and enable them to effectively incorporate privacy-awareness in the design phase of their products.
Privacy Engineering: Read More [+]
Objectives & Outcomes

Course Objectives: Critique the strengths and weaknesses of the different privacy paradigms
Describe the different technical paradigms of privacy that are applicable for systems engineering
Implement such privacy paradigms, and embed them in information systems during the design process and the implementation phase
Stay updated about the state of the art in the field of privacy engineering

Rules & Requirements

Credit Restrictions: Students will receive no credit for INFO 255 after completing INFO 255. A deficient grade in INFO 255 may be removed by taking INFO 255.

Hours & Format

Fall and/or spring: 15 weeks - 1.5 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Privacy Engineering: Read Less [-]

INFO 256 Applied Natural Language Processing 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2021
This course examines the use of natural language processing as a set of methods for exploring and reasoning about text as data, focusing especially on the applied side of NLP — using existing NLP methods and libraries in Python in new and creative ways. Topics include part-of-speech tagging, shallow parsing, text classification, information extraction, incorporation of lexicons and ontologies into text analysis, and question answering. Students will apply and extend existing software tools to text-processing problems.
Applied Natural Language Processing: Read More [+]
Rules & Requirements

Prerequisites: INFO 206A and INFO 206B or proficient programming in Python (programs of at least 200 lines of code). Proficient with basic statistics and probabilities

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Bamman

Applied Natural Language Processing: Read Less [-]

INFO 258 Data Engineering 4 Units

Terms offered: Spring 2024, Fall 2022
This course will cover the principles and practices of managing data at scale, with a focus on use cases in data analysis and machine learning. We will cover the entire life cycle of data management and science, ranging from data preparation to exploration, visualization and analysis, to machine learning and collaboration, with a focus on ensuring reliable, scalable operationalization.
ensuring reliable, scalable operationalization.
Data Engineering: Read More [+]
Rules & Requirements

Prerequisites: INFO 206B or equivalent college-level course in computer science in Python with a C- or better AND COMPSCI C100/DATA C100/STAT C100 or COMPSCI 189 or INFO 251 or DATA 144 or equivalent college-level course in data science with a C- or better

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructors: Hellerstein, Parameswaran, Jain

Data Engineering: Read Less [-]

INFO 259 Natural Language Processing 4 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022
This course introduces students to natural language processing and exposes them to the variety of methods available for reasoning about text in computational systems. NLP is deeply interdisciplinary, drawing on both linguistics and computer science, and helps drive much contemporary work in text analysis (as used in computational social science, the digital humanities, and computational journalism). We will focus on major algorithms used in NLP for various applications (part-of-speech tagging, parsing, coreference resolution, machine translation) and on the linguistic phenomena those algorithms attempt to model. Students will implement algorithms and create linguistically annotated data on which those algorithms depend.
Natural Language Processing: Read More [+]
Rules & Requirements

Prerequisites: Familiarity with data structures, algorithms, linear algebra, and probability

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Bamman

Natural Language Processing: Read Less [-]

INFO C262 Theory and Practice of Tangible User Interfaces 4 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022
This course explores the theory and practice of Tangible User Interfaces, a new approach to Human Computer Interaction that focuses on the physical interaction with computational media. The topics covered in the course include theoretical framework, design examples, enabling technologies, and evaluation of Tangible User Interfaces. Students will design and develop experimental Tangible User Interfaces using physical computing prototyping tools and write a final project report.
Theory and Practice of Tangible User Interfaces: Read More [+]
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of laboratory per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Ryokai

Also listed as: NWMEDIA C262

Theory and Practice of Tangible User Interfaces: Read Less [-]

INFO C265 Interface Aesthetics 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022
This course will cover new interface metaphors beyond desktops (e.g., for mobile devices, computationally enhanced environments, tangible user interfaces) but will also cover visual design basics (e.g., color, layout, typography, iconography) so that we have systematic and critical understanding of aesthetically engaging interfaces. Students will get a hands-on learning experience on these topics through course projects, design critiques, and discussions, in addition to lectures and readings.
Interface Aesthetics: Read More [+]
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Ryokai

Also listed as: NWMEDIA C265

Interface Aesthetics: Read Less [-]

INFO 271B Quantitative Research Methods for Information Systems and Management 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022
Introduction to many different types of quantitative research methods, with an emphasis on linking quantitative statistical techniques to real-world research methods. Introductory and intermediate topics include: defining research problems, theory testing, casual inference, probability, and univariate statistics. Research design and methodology topics include: primary/secondary survey data analysis, experimental designs, and coding qualitative data for quantitative analysis.
Quantitative Research Methods for Information Systems and Management: Read More [+]
Rules & Requirements

Prerequisites: Introductory statistics recommended

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Cheshire

Quantitative Research Methods for Information Systems and Management: Read Less [-]

INFO 272 Qualitative Research Methods for Information Systems and Management 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022
Theory and practice of naturalistic inquiry. Grounded theory. Ethnographic methods including interviews, focus groups, naturalistic observation. Case studies. Analysis of qualitative data. Issues of validity and generalizability in qualitative research.
Qualitative Research Methods for Information Systems and Management: Read More [+]

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Burrell

Qualitative Research Methods for Information Systems and Management: Read Less [-]

INFO 283 Information and Communications Technology for Development 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022
This seminar reviews current literature and debates regarding Information and Communication Technologies and Development (ICTD). This is an interdisciplinary and practice-oriented field that draws on insights from economics, sociology, engineering, computer science, management, public health, etc.
Information and Communications Technology for Development: Read More [+]

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Saxenian

Formerly known as: Information C283

Information and Communications Technology for Development: Read Less [-]

INFO 288 Big Data and Development 3 Units

Terms offered: Spring 2024, Spring 2021, Spring 2019
As new sources of digital data proliferate in developing economies, there is the exciting possibility that such data could be used to benefit the world's poor. Through a careful reading of recent research and through hands-on analysis of large-scale datasets, this course introduces students to the opportunities and challenges for data-intensive approaches to international development. Students should be prepared to dissect, discuss, and replicate academic publications from several fields including development economics, machine learning, information science, and computational social science. Students will also conduct original statistical and computational analysis of real-world data.
Big Data and Development: Read More [+]

Rules & Requirements

Prerequisites: Students are expected to have prior graduate training in machine learning, econometrics, or a related field

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Blumenstock

Big Data and Development: Read Less [-]

INFO 289 Public Interest Cybersecurity: The Citizen Clinic Practicum 3 Units

Terms offered: Fall 2024, Spring 2024, Fall 2023
This course provides students with real-world experience assisting politically vulnerable organizations and persons around the world to develop and implement sound cybersecurity practices. In the classroom, students study basic theories and practices of digital security, intricacies of protecting largely under-resourced organizations, and tools needed to manage risk in complex political, sociological, legal, and ethical contexts. In the clinic, students work in teams supervised by Clinic staff to provide direct cybersecurity assistance to civil society organizations. We emphasize pragmatic, workable solutions that take into account the unique needs of each partner organization.
Public Interest Cybersecurity: The Citizen Clinic Practicum: Read More [+]

Rules & Requirements

Repeat rules: Course may be repeated for credit with instructor consent.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Public Interest Cybersecurity: The Citizen Clinic Practicum: Read Less [-]

INFO 290 Special Topics in Information 1 - 4 Units

Terms offered: Fall 2024, Spring 2024, Fall 2023
Specific topics, hours, and credit may vary from section to section, year to year.
Special Topics in Information: Read More [+]
Rules & Requirements

Repeat rules: Course may be repeated for credit when topic changes. Students may enroll in multiple sections of this course within the same semester.

Hours & Format

Fall and/or spring:
8 weeks - 2-8 hours of lecture per week
15 weeks - 1-4 hours of lecture per week

Summer: 10 weeks - 1.5-6 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Special Topics in Information: Read Less [-]

INFO 290M Special Topics in Management 1 - 4 Units

Terms offered: Fall 2024, Spring 2024, Fall 2023
Specific topics, hours, and credit may vary from section to section and year to year.
Special Topics in Management: Read More [+]
Rules & Requirements

Repeat rules: Course may be repeated for credit when topic changes. Students may enroll in multiple sections of this course within the same semester.

Hours & Format

Fall and/or spring:
8 weeks - 2-8 hours of lecture per week
15 weeks - 1-4 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Special Topics in Management: Read Less [-]

INFO 290S Special Topics in Social Science and Policy 2 - 4 Units

Terms offered: Fall 2024, Fall 2023, Spring 2023
Specific topics, hours, and credit may vary from section to section and year to year.
Special Topics in Social Science and Policy: Read More [+]
Rules & Requirements

Repeat rules: Course may be repeated for credit when topic changes. Students may enroll in multiple sections of this course within the same semester.

Hours & Format

Fall and/or spring:
8 weeks - 4-8 hours of lecture per week
15 weeks - 2-4 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Special Topics in Social Science and Policy: Read Less [-]

INFO 290T Special Topics in Technology 2 - 4 Units

Terms offered: Spring 2024, Fall 2023, Spring 2023
Specific topics, hours, and credit may vary from section to section and year to year.
Special Topics in Technology: Read More [+]
Rules & Requirements

Repeat rules: Course may be repeated for credit when topic changes. Students may enroll in multiple sections of this course within the same semester.

Hours & Format

Fall and/or spring:
8 weeks - 4-8 hours of lecture per week
15 weeks - 2-4 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Special Topics in Technology: Read Less [-]

INFO 291 Special Topics in Information 1 - 4 Units

Terms offered: Prior to 2007
Specific topics, hours, and credit may vary from section to section, year to year.
Special Topics in Information: Read More [+]
Rules & Requirements

Repeat rules: Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of lecture per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

Instructor: Hoofnagle

Special Topics in Information: Read Less [-]

INFO 293 Information Management Practicum 0.5 Units

Terms offered: Fall 2016, Summer 2016 10 Week Session, Spring 2016
This course is designed to help School of Information graduate students maximize their internship, practicum, or independent research experiences.
Information Management Practicum: Read More [+]
Objectives & Outcomes

Course Objectives: Experience the practical application of your academic knowledge to real-world professional contexts;
Gain insight into an organization and how one might make a valuable contribution;
Reflect on the information the experience has provided, to see if it fits within one’s personal value set and work/life manifestos.
Try out various professional activities to see when you are in ‘flow’;

Student Learning Outcomes: Assess the organizational culture of a company, governmental body, or non-governmental organization
Connect academic knowledge about information management to real-world professional contexts
Evaluate the effectiveness of a variety of information science techniques when deployed in organizational situations
Integrate the student's own individual professional goals with the organization's needs relevant to the internship or practicum
Reflect critically on the internship or practicum experience

Rules & Requirements

Prerequisites: Consent of a Head Graduate Adviser for the School of Information

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of internship per week

Summer: 10 weeks - 1.5 hours of internship per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

Information Management Practicum: Read Less [-]

INFO 294 Doctoral Research and Theory Workshop 2 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022
An intensive weekly discussion of current and ongoing research by Ph.D. students with a research interest in issues of information (social, legal, technical, theoretical, etc.). Our goal is to focus on critiquing research problems, theories, and methodologies from multiple perspectives so that we can produce high-quality, publishable work in the interdisciplinary area of information research. Circulated material may include dissertation chapters, qualifying papers, article drafts, and/or new project ideas. We want to have critical and productive discussion, but above all else we want to make our work better: more interesting, more accessible, more rigorous, more theoretically grounded, and more like the stuff we enjoy reading.
Doctoral Research and Theory Workshop: Read More [+]
Rules & Requirements

Prerequisites: PhD students only

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of workshop per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Instructor: Cheshire

Doctoral Research and Theory Workshop: Read Less [-]

INFO 295 Doctoral Colloquium 1 Unit

Terms offered: Fall 2024, Fall 2023, Spring 2023
Colloquia, discussion and readings designed to introduce students to the range of interests of the school.
Doctoral Colloquium: Read More [+]
Rules & Requirements

Prerequisites: Ph.D. standing in the School of Information

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of colloquium per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

Doctoral Colloquium: Read Less [-]

INFO 296A Seminar 2 - 4 Units

Terms offered: Fall 2024, Spring 2024, Fall 2023
Topics in information management and systems and related fields. Specific topics vary from year to year.
Seminar: Read More [+]
Rules & Requirements

Prerequisites: Consent of instructor

Repeat rules: Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 2-4 hours of seminar per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Seminar: Read Less [-]

INFO 298 Directed Group Study 1 - 4 Units

Terms offered: Fall 2019, Spring 2016, Fall 2015
Group projects on special topics in information management and systems.
Directed Group Study: Read More [+]
Rules & Requirements

Prerequisites: Consent of instructor

Credit Restrictions: Students will receive no credit for INFO 298 after completing INFOSYS 298.

Repeat rules: Course may be repeated for credit when topic changes. Students may enroll in multiple sections of this course within the same semester.

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of directed group study per week

Summer: 8 weeks - 1.5-7.5 hours of directed group study per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Directed Group Study: Read Less [-]

INFO 298A Directed Group Work on Final Project 1 - 4 Units

Terms offered: Spring 2022, Spring 2016, Spring 2015
The final project is designed to integrate the skills and concepts learned during the Information School Master's program and helps prepare students to compete in the job market. It provides experience in formulating and carrying out a sustained, coherent, and significant course of work resulting in a tangible work product; in project management, in presenting work in both written and oral form; and, when appropriate, in working in a multidisciplinary team. Projects may take the form of research papers or professionally-oriented applied work.
Directed Group Work on Final Project: Read More [+]
Rules & Requirements

Prerequisites: Consent of instructor. Course must be taken for a letter grade to fulfill degree requirements

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of directed group study per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Directed Group Work on Final Project: Read Less [-]

INFO 299 Individual Study 1 - 12 Units

Terms offered: Fall 2023, Summer 2016 8 Week Session, Spring 2016
Individual study of topics in information management and systems under faculty supervision.
Individual Study: Read More [+]
Rules & Requirements

Prerequisites: Consent of instructor

Repeat rules: Course may be repeated for credit when topic changes. Students may enroll in multiple sections of this course within the same semester.

Hours & Format

Fall and/or spring: 15 weeks - 1-12 hours of independent study per week

Summer: 8 weeks - 2-22.5 hours of independent study per week

Additional Details

Subject/Course Level: Information/Graduate

Grading: Letter grade.

Individual Study: Read Less [-]

INFO 375 Teaching Assistance Practicum 2 Units

Terms offered: Spring 2024, Fall 2021, Fall 2020
Discussion, reading, preparation, and practical experience under faculty supervision in the teaching of specific topics within information management and systems. Does not count toward a degree.
Teaching Assistance Practicum: Read More [+]
Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details

Subject/Course Level: Information/Professional course for teachers or prospective teachers

Grading: Offered for satisfactory/unsatisfactory grade only.

Instructor: Duguid

Teaching Assistance Practicum: Read Less [-]

INFO 602 Individual Study for Doctoral Students 1 - 5 Units

Terms offered: Spring 2016, Fall 2015, Spring 2015
Individual study in consultation with the major field adviser, intended to provide an opportunity for qualified students to prepare themselves for the various examinations required of candidates for the Ph.D. degree.
Individual Study for Doctoral Students: Read More [+]
Rules & Requirements

Prerequisites: Consent of instructor

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format

Fall and/or spring: 15 weeks - 1-5 hours of independent study per week

Additional Details

Subject/Course Level: Information/Graduate examination preparation

Grading: Offered for satisfactory/unsatisfactory grade only.

Individual Study for Doctoral Students: Read Less [-]

Data Science

Expand all course descriptions [+]Collapse all course descriptions [-]

DATASCI 200 Introduction to Data Science Programming 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
This fast-paced course gives students fundamental Python knowledge necessary for advanced work in data science. Students gain frequent practice writing code, building to advanced skills focused on data science applications. We introduce a range of Python objects and control structures, then build on these with classes on object-oriented programming. A major programming project reinforces these concepts, giving students insight into how a large piece of software is built and experience managing a full-cycle development project. The last section covers two popular Python packages for data analysis, Numpy and Pandas, and includes an exploratory data analysis.
Introduction to Data Science Programming: Read More [+]
Objectives & Outcomes

Student Learning Outcomes: Be able to design, reason about, and implement algorithms for solving computational problems.
Be able to generate an exploratory analysis of a data set using Python.
Be able to navigate a file system, manipulate files, and execute programs using a command line interface.
Be able to test and effectively debug programs.
Be fluent in Python syntax and familiar with foundational Python object types.
Be prepared for further programming challenges in more advanced data science courses.
Know how to read, manipulate, describe, and visualize data using the Numpy and Pandas packages.
Know how to use Python to extract data from different type of files and other sources.
Understand how to manage different versions of a project using Git and how to collaborate with others using Github.
Understand the principles of functional programming.
Understand the principles of object-oriented design and the process by which large pieces of software are developed.

Rules & Requirements

Prerequisites: MIDS students only

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Instructor: Laskowski

Formerly known as: Data Science W200

Introduction to Data Science Programming: Read Less [-]

DATASCI 201 Research Design and Applications for Data and Analysis 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
Introduces the data sciences landscape, with a particular focus on learning data science techniques to uncover and answer the questions students will encounter in industry. Lectures, readings, discussions, and assignments will teach how to apply disciplined, creative methods to ask better questions, gather data, interpret results, and convey findings to various audiences. The emphasis throughout is on making practical contributions to real decisions that organizations will and should make. Course must be taken for a letter grade to fulfill degree requirements.
Research Design and Applications for Data and Analysis: Read More [+]
Rules & Requirements

Prerequisites: MIDS students only

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Instructor: Rivera

Formerly known as: Data Science W201

Research Design and Applications for Data and Analysis: Read Less [-]

DATASCI 203 Statistics for Data Science 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
This course provides students with a foundational understanding of classical statistics within the broader context of data science. Topics include exploratory analysis and descriptive statistics, probability theory and the foundations of statistical modeling, estimators, hypothesis testing, and classical linear regression. Causal inference and reproducibility issues are treated briefly. Students will learn to apply the most common statistical procedures correctly, checking assumptions and responding appropriately when they appear violated; to evaluate the design of a study and how the variables being measured relate to research questions; and to analyze real-world data using the open-source language R.
Statistics for Data Science: Read More [+]

Rules & Requirements

Prerequisites: MIDS students only. Intermediate competency in calculus is required. A college-level linear algebra course is recommended

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Formerly known as: Data Science W203

Statistics for Data Science: Read Less [-]

DATASCI 205 Fundamentals of Data Engineering 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
Storing, managing, and processing datasets are foundational processes in data science. This course introduces the fundamental knowledge and skills of data engineering that are required to be effective as a data scientist. This course focuses on the basics of data pipelines, data pipeline flows and associated business use cases, and how organizations derive value from data and data engineering. As these fundamentals of data engineering are introduced, learners will interact with data and data processes at various stages in the pipeline, understand key data engineering tools and platforms, and use and connect critical technologies through which one can construct storage and processing architectures that underpin data science applications.
Fundamentals of Data Engineering: Read More [+]

Rules & Requirements

Prerequisites: MIDS students only. Intermediate competency in Python, C, or Java, and competency in Linux, GitHub, and relevant Python libraries. Knowledge of database management including SQL is recommended but not required

Credit Restrictions: Students will receive no credit for DATASCI W205 after completing DATASCI 205. A deficient grade in DATASCI W205 may be removed by taking DATASCI 205.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Instructor: Crook

Formerly known as: Data Science W205

Fundamentals of Data Engineering: Read Less [-]

DATASCI 207 Applied Machine Learning 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
Machine learning is a rapidly growing field at the intersection of computer science and statistics concerned with finding patterns in data. It is responsible for tremendous advances in technology, from personalized product recommendations to speech recognition in cell phones. This course provides a broad introduction to the key ideas in machine learning. The emphasis will be on intuition and practical examples rather than theoretical results, though some experience with probability, statistics, and linear algebra will be important. Course must be taken for a letter grade to fulfill degree requirements.
Applied Machine Learning: Read More [+]

Rules & Requirements

Prerequisites: MIDS students only. DATASCI 201 or DATASCI 201A and DATASCI 203. Intermediate competency in Python, C, or Java, and competency in Linux, GitHub, and relevant Python libraries. Linear algebra is recommended

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Formerly known as: Data Science W207

Applied Machine Learning: Read Less [-]

DATASCI 209 Data Visualization 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
Visualization enhances exploratory analysis as well as efficient communication of data results. This course focuses on the design of visual representations of data in order to discover patterns, answer questions, convey findings, drive decisions, and provide persuasive evidence. The goal is to give you the practical knowledge you need to create effective tools for both exploring and explaining your data. Exercises throughout the course provide a hands-on experience using relevant programming libraries and software tools to apply research and design concepts learned.
Data Visualization: Read More [+]

Objectives & Outcomes

Student Learning Outcomes: Analyze data using exploratory visualization.
Build commonly requested types of visualizations as well as more advanced visualizations using ground-up customization.
Constructively critique existing visualizations, identifying issues of integrity as well as excellence.
Create useful, performant visualizations from real-world data sources, including large and complex datasets.
Design aesthetically pleasing static and interactive visualizations with perceptually appropriate forms and encodings.
Improve your own work through usability testing and iteration, with attention to context.
Select appropriate tools for building visualizations, and gain skills to evaluate new tools.

Rules & Requirements

Prerequisites: MIDS students only. DATASCI 200. Intermediate competency in Python, C, or Java, and competency in Linux, GitHub, and relevant Python libraries. Recommended: experience with HTML, CSS, and JavaScript, or ability to learn new programming languages quickly. If Python is the only programming language you know, you will probably benefit from learning the basics of web development with JavaScript in advance

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Formerly known as: Data Science W209

Data Visualization: Read Less [-]

DATASCI 210 Capstone 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
The capstone course will cement skills learned throughout the MIDS program – both core data science skills and "soft skills" like problem-solving, communication, influencing, and management – preparing students for success in the field. The centerpiece is a semester-long group project in which teams of students propose and select project ideas, conduct and communicate their work, receive and provide feedback (in informal group discussions as well as formal class presentations), and deliver compelling presentations along with a Web-based final deliverable. Includes relevant readings, case discussions, and real-world examples and perspectives from panel discussions with leading data science experts and industry practitioners.
Capstone: Read More [+]
Rules & Requirements

Prerequisites: MIDS students only. DATASCI 200, DATASCI 201, DATASCI 203, DATASCI 205, and DATASCI 207. Must be taken in final term of the MIDS program

Credit Restrictions: Students will receive no credit for DATASCI W210 after completing DATASCI 210. A deficient grade in DATASCI W210 may be removed by taking DATASCI 210.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Formerly known as: Data Science W210

Capstone: Read Less [-]

DATASCI 210A Capstone for Early Career Data Scientists 4 Units

Terms offered: Fall 2023
In the Capstone class, students combine technical, analytical, interpretive, problem-solving, and strategic thinking dimensions to design and execute a full end-to-end data science project. Students will develop their technical and non-technical skills as data scientists who focus on real-world and impactful applications and situations. The final project provides a learning opportunity and "sandbox" to integrate all skills and concepts learned throughout the MIDS program and provides experience and hands-on tools in formulating and implementing an impactful and compelling project. Students are evaluated on their ability to work in a dynamic team environment to collaborate, co-develop, and communicate their work.
Capstone for Early Career Data Scientists: Read More [+]
Objectives & Outcomes

Student Learning Outcomes: Construct and perform persuasive, informative and understandable written, spoken, or visualized narratives that concisely convey findings, solutions, and applications of data-driven approaches that have been incorporated in project work.

Demonstrate an ability to integrate and synthesize knowledge and skills gained through other courses in the program (critical technical, analytical, strategic thinking, problem-solving, communication, influencing, and management skills) in developing and implementing a capstone project that addresses a key data science problem.

Demonstrate proficiency in applying technical and analytical skills towards the collection, storage, and analysis of data towards problem-solving and project execution. Assess and select data and the data collection methods that best fit the specific outcome or need of a project or problem space.

Demonstrate proficiency in identifying target user audience for the Capstone project and conduct expert and target user interviews to validate problem framing, scoping, and hypothesis.

Demonstrate proficiency in selecting the appropriate data science and machine learning approaches for a specific project and perform model evaluation to demonstrate the efficacy of the model and its value to the target users.

Effectively engage in a process of teamwork, feedback from peers, instructors and experts, and informed iteration that mirrors the challenges and opportunities of applying data science in a realistic organizational setting. Conduct self-assessment of professional development and leadership.

Identify and articulate a problem space to address through application of data driven methods, approaches and practices that include an understanding of stakeholders, social contexts, potential impact, and potential obstacles.

Identify and describe effective teamwork skills, practices, and characteristics of an effective workplace or project team, including distribution of team tasks and duties. Understand and apply successful communication strategies for teams, for various stakeholders within an organization with different contextual requirements and expectations. Understand, incorporate, and practice integrated understanding of what it takes to imagine, design, and execute a data science project from start to finish.

Rules & Requirements

Prerequisites: 5th Year MIDS students only. DATASCI 200, DATASCI 201A, DATASCI 203, DATASCI 205, and DATASCI 207. Must be taken in the final term of the 5th Year MIDS program

DATASCI 221 Modern Data Applications 3 Units

Terms offered: Summer 2024, Spring 2024
This is a multidisciplinary graduate course that synthesizes data management, data economy, and machine learning & AI strategy and research, product innovation, business and enterprise technology strategy, industry analysis, organizational decision-making and data-driven leadership into one course offering. The course provides strategic thinking tools, analytical frameworks, and real-world case examples to help students explore and investigate modern data applications and opportunities in multiple domains and industries. Students are required to participate in weekly sessions and write response pieces as well as a final paper and presentation evaluating one defining application or emerging technology in machine learning/AI end-to-end.
Modern Data Applications: Read More [+]

Objectives & Outcomes

Student Learning Outcomes: Anticipate the opportunities and problems likely to be encountered in building and working with any given data application as business and technology requirements as well as secular trends evolve.

Create a strategic business case for a new or emerging data application or data science / machine learning use case.

Develop strategic and business thinking in various data science domains.

Evaluate data science applications and opportunities across a number of situations and domains.

Learn a set of qualitative models and analytical frameworks to evaluate any modern data application and emerging trends in machine learning and AI.

Understand “modern data stacks” and how to manage and use data as an asset in an organization for responsible decision making.

Rules & Requirements

Prerequisites: MIDS students only. DATASCI 205 and DATASCI 207. Students can take DATASCI 205 concurrently with DATASCI 221; students may not drop DATASCI 205 and remain in DATASCI 221. Students cannot take DATASCI 221 concurrently with DATASCI 210

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Modern Data Applications: Read Less [-]

DATASCI 231 Behind the Data: Humans and Values 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
Intro to the legal, policy, and ethical implications of data, including privacy, surveillance, security, classification, discrimination, decisional-autonomy, and duties to warn or act. Examines legal, policy, and ethical issues throughout the full data-science life cycle — collection, storage, processing, analysis, and use — with case studies from criminal justice, national security, health, marketing, politics, education, employment, athletics, and development. Includes legal and policy constraints and considerations for specific domains and data-types, collection methods, and institutions; technical, legal, and market approaches to mitigating and managing concerns; and the strengths and benefits of competing and complementary approaches.
Behind the Data: Humans and Values: Read More [+]

Rules & Requirements

Prerequisites: MIDS and MPA students only

Credit Restrictions: Students will receive no credit for DATASCI W231 after completing DATASCI 231. A deficient grade in DATASCI W231 may be removed by taking DATASCI 231.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Instructor: Morgan

Formerly known as: Data Science W231

Behind the Data: Humans and Values: Read Less [-]

DATASCI 233 Privacy Engineering 3 Units

Terms offered: Spring 2024, Fall 2023, Spring 2023
This course surveys privacy mechanisms applicable to systems engineering, with a particular focus on the inference threat arising due to advancements in artificial intelligence and machine learning. We will briefly discuss the history of privacy and compare two major examples of general legal frameworks for privacy from the United States and the European Union. We then survey three design frameworks of privacy that may be used to guide the design of privacy-aware information systems. Finally, we survey threat-specific technical privacy frameworks and discuss their applicability in different settings, including statistical privacy with randomized responses, anonymization techniques, semantic privacy models, and technical privacy mechanisms.
Privacy Engineering: Read More [+]
Rules & Requirements

Prerequisites: MIDS students only

Credit Restrictions: Students will receive no credit for DATASCI W233 after completing DATASCI 233. A deficient grade in DATASCI W233 may be removed by taking DATASCI 233.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Formerly known as: Data Science W233

Privacy Engineering: Read Less [-]

DATASCI 241 Experiments and Causal Inference 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
This course introduces students to experimentation in the social sciences. This topic has
increased considerably in importance since 1995, as researchers have learned to think
creatively about how to generate data in more scientific ways, and developments in information
technology have facilitated the development of better data gathering. Key to this area of inquiry is
the insight that correlation does not necessarily imply causality. In this course, we learn how to
use experiments to establish causal effects and how to be appropriately skeptical of findings
from observational data.
Experiments and Causal Inference: Read More [+]
Rules & Requirements

Prerequisites: MIDS students only. DATASCI 201 or DATASCI 201A and DATASCI 203

Credit Restrictions: Students will receive no credit for DATASCI W241 after completing DATASCI 241. A deficient grade in DATASCI W241 may be removed by taking DATASCI 241.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Formerly known as: Data Science W241

Experiments and Causal Inference: Read Less [-]

DATASCI 255 Machine Learning Systems Engineering 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
This course provides learners hands-on data management and systems engineering experience using containers, cloud, and Kubernetes ecosystems based on current industry practice. The course will be project-based with an emphasis on how production systems are used at leading technology-focused companies and organizations. During the course, learners will build a body of knowledge around data management, architectural design, developing batch and streaming data pipelines, scheduling, and security around data including access management and auditability. We'll also cover how these tools are changing the technology landscape.
Machine Learning Systems Engineering: Read More [+]
Objectives & Outcomes

Student Learning Outcomes: Construct, measure, and identify metrics relating to performance of a system in order to optimize costs and latency of serving inferences for machine learning models.

Demonstrate understanding of Kubernetes for management of machine learning models.

Describe the difference between a monolithic and microservice architecture, assess and select appropriate use cases for each.

Describe the differences between a development and production system particularly for Machine Learning where the boundaries are blurry.

Know when to leverage a cache for serving machine learning models to reduce load on production systems.

Understand continuous integration and continuous delivery (CI/CD) pipeline for automated code deployment, particularly for ML models.

Understand how stateful systems add complexities to systems engineering.
Understand how to serve machine learning models over an API in real-time.

Rules & Requirements

Prerequisites: MIDS students only. DATASCI 205 and DATASCI 207. We assume you are familiar with generating predictions from a trained machine learning model. Familiarity with command line (Bash), Python, and Git. We assume you have a working knowledge of SSH, Ports, and familiarity with networking concepts such as DNS

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Machine Learning Systems Engineering: Read Less [-]

DATASCI 261 Machine Learning at Scale 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
This course teaches the underlying principles required to develop scalable machine learning pipelines for structured and unstructured data at the petabyte scale. Students will gain hands-on experience in Apache Hadoop and Apache Spark.
Machine Learning at Scale: Read More [+]
Rules & Requirements

Prerequisites: MIDS students only. DATASCI 205 and DATASCI 207. Intermediate programming skills in an object-oriented language (e.g., Python)

Credit Restrictions: Students will receive no credit for DATASCI W261 after completing DATASCI 261. A deficient grade in DATASCI W261 may be removed by taking DATASCI 261.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Formerly known as: Data Science W261

Machine Learning at Scale: Read Less [-]

DATASCI 266 Natural Language Processing with Deep Learning 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
Understanding language is fundamental to human interaction. Our brains have evolved language-specific circuitry that helps us learn it very quickly; however, this also means that we have great difficulty explaining how exactly meaning arises from sounds and symbols. This course is a broad introduction to linguistic phenomena and our attempts to analyze them with machine learning. We will cover a wide range of concepts with a focus on practical applications such as information extraction, machine translation, sentiment analysis, and summarization.
Natural Language Processing with Deep Learning: Read More [+]
Rules & Requirements

Prerequisites: MIDS students only. DATASCI 207

Credit Restrictions: Students will receive no credit for DATASCI W266 after completing DATASCI 266. A deficient grade in DATASCI W266 may be removed by taking DATASCI 266.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Instructor: Gillick

Formerly known as: Data Science W266

Natural Language Processing with Deep Learning: Read Less [-]

DATASCI 267 Generative AI 3 Units

Terms offered: Not yet offered
This course focuses on the practical aspects of LLMs to enable students to be effective and responsible users of generative AI technologies. The course has three parts. Introduction section covers the historical aspects, key technical ideas and learnings all the way to Transformer architectures and various LLM training aspects. The Practical Aspects and Techniques section, students learn how to train, deploy, and use LLMs; and discuss core concepts like prompt tuning, quantization, and parameter efficient fine-tuning, and explore use case patterns. Finally, a discussion of challenges & opportunities offered by Generative AI, which includes highlighting critical issues like bias and inclusivity, fake information, safety, and some IP issue
Generative AI: Read More [+]
Objectives & Outcomes

Student Learning Outcomes: Appreciate the history of the path towards Large Language Models (LLMs) and Generative AI approaches.
Be able to understand key use case patterns of Generative AI approaches and know how to think about incorporating them into applications.
Become aware of critical issues such as bias, inclusivity problems, hallucinations, and IP questions
Become conversant in PyTorch and key neural net coding strategies.
Know how to approach improving the results obtained from LLMs through prompt-tuning, instruction-based fine-tuning, and Reinforcement Learning with Human Feedback.
Understand the foundations of LLMs, how they are trained, and how to deploy and use them, for and beyond text-focused problems.

Rules & Requirements

Prerequisites: MIDS students only. DATASCI 207. Students need to know what gradient descent is. Simple linear classifiers and softmax are reviewed in the course at a high level, but students should have at least heard of these terms. Linear algebra required, which is used for vector representations and deep learning in the course. Intermediate competency in Python required. Experience in PyTorch recommended

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Generative AI: Read Less [-]

DATASCI 271 Statistical Methods for Discrete Response, Time Series, and Panel Data 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
A continuation of DATASCI 203, this course trains data science students to apply more advanced methods from regression analysis and time series models. Central topics include linear regression, causal inference, identification strategies, and a wide-range of time series models that are frequently used by industry professionals. Throughout the course, we emphasize choosing, applying, and implementing statistical techniques to capture key patterns and generate insight from data. Students who successfully complete this course will be able to distinguish between appropriate and inappropriate techniques given the problem under consideration, the data available, and the given timeframe.
Statistical Methods for Discrete Response, Time Series, and Panel Data: Read More [+]

Rules & Requirements

Prerequisites: MIDS students only. DATASCI 203 taken in Fall 2016 or later and completed with a grade of B+ or above. Strong familiarity with classical linear regression modeling; strong hands-on experience in R; working knowledge of calculus and linear algebra; familiarity with differential calculus, integral calculus and matrix notations

Credit Restrictions: Students will receive no credit for DATASCI W271 after completing DATASCI 271. A deficient grade in DATASCI W271 may be removed by taking DATASCI 271.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Formerly known as: Data Science W271

Statistical Methods for Discrete Response, Time Series, and Panel Data: Read Less [-]

DATASCI 281 Computer Vision 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
This course introduces the theoretical and practical aspects of computer vision, covering both classical and state of the art deep-learning based approaches. This course covers everything from the basics of the image formation process in digital cameras and biological systems, through a mathematical and practical treatment of basic image processing, space/frequency representations, classical computer vision techniques for making 3-D measurements from images, and modern deep-learning based techniques for image classification and recognition.
Computer Vision: Read More [+]

Objectives & Outcomes

Student Learning Outcomes: Be able to read and understand research papers in the computer-vision literature.

Build computer vision systems to solve real-world problems.

Properly formulate problems with the appropriate mathematical and computational tools.

Understand the building blocks of classical computer vision techniques. Understand the building blocks of modern computer vision techniques (primarily artificial neural networks).

Understand the process by which images are formed and represented.

Rules & Requirements

Prerequisites: MIDS students only. DATASCI 207. We assume you are familiar with machine learning techniques. You should also be comfortable with linear algebra, which we'll use for vector representations and when we discuss deep learning. Intermediate programming skills in an object-oriented language (e.g., Python). This course will use Python for all examples, exercises, and assignments

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Computer Vision: Read Less [-]

DATASCI 290 Special Topics 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
Specific topics, may vary from section to section, year to year.
Special Topics: Read More [+]
Rules & Requirements

Prerequisites: MIDS students only

Repeat rules: Course may be repeated for credit when topic changes. Students may enroll in multiple sections of this course within the same semester.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Letter grade.

Special Topics: Read Less [-]

DATASCI 293 Data Science Professional Practicum 1 Unit

Terms offered: Summer 2024, Summer 2023
This course provides academic scaffolding for graduate students in data science who are engaged in internships, practicums, or relevant types of independent research while progressing toward a master's degree. We focus on developing skills in project management, organizational navigation, and professional communication related to data science. In addition, the practicum explores various applications of data science methods in industrial, academic, governmental, and nonprofit settings. We discuss common challenges facing data scientists at work and possible approaches to addressing these challenges.
Data Science Professional Practicum: Read More [+]
Objectives & Outcomes

Student Learning Outcomes: Assess the organizational culture of a company, governmental body, or non-governmental organization, especially as it relates to data-driven decision making and ability to adopt or employ data science methods
Connect academic knowledge about data science to real-world professional contexts
Evaluate the effectiveness of a variety of data science methods when deployed in organizational situations
Integrate the student's own individual professional goals with the organization's needs relevant to the internship or practicum
Reflect critically on the internship or practicum experience

Rules & Requirements

Prerequisites: 5th Year MIDS students only

Hours & Format

Fall and/or spring: 14 weeks - 1 hour of lecture per week

Summer: 14 weeks - 1 hour of lecture per week

Additional Details

Subject/Course Level: Data Science/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

Data Science Professional Practicum: Read Less [-]

Cybersecurity

Expand all course descriptions [+]Collapse all course descriptions [-]

CYBER 200 Beyond the Code: Cybersecurity in Context 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
This course explores the most important elements beyond technology that shape the playing field on which cybersecurity problems emerge and are managed. The course emphasizes how ethical, legal, and economic frameworks enable and constrain security technologies and policies. It introduces some of the most important macro-elements (such as national security considerations and interests of nation-states) and micro-elements (such as behavioral economic insights into how people understand and interact with security features). Specific topics include policymaking, business models, legal frameworks, national security considerations, ethical issues, standards making, and the roles of users, government, and industry.
Beyond the Code: Cybersecurity in Context: Read More [+]
Rules & Requirements

Prerequisites: MICS students only

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Formerly known as: Information and Cybersecurity W200

Beyond the Code: Cybersecurity in Context: Read Less [-]

CYBER 202 Cryptography for Cyber and Network Security 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
This course focuses on both mathematical and practical foundations of cryptography. The course discusses asymmetric and symmetric cryptography, Kerchkoff's Principle, chosen and known plaintext attacks, public key infrastructure, X.509, SSL/TLS (https), and authentication protocols. The course will include an in-depth discussion of many different cryptosystems including the RSA, Rabin, DES, AES, Elliptic Curve, and SHA family cryptosystems. This course also introduces advanced topics of applied cryptography, including a brief introduction to homomorphic encrypted computation and secure multi-party computation to protect sensitive data during arbitrary computation, cryptocurrency and its cryptographic building blocks, and quantum computing.
Cryptography for Cyber and Network Security: Read More [+]
Rules & Requirements

Prerequisites: MICS students only. CYBER 206

Credit Restrictions: Students will receive no credit for CYBER W202 after completing CYBER 202. A deficient grade in CYBER W202 may be removed by taking CYBER 202.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Formerly known as: Information and Cybersecurity W202

Cryptography for Cyber and Network Security: Read Less [-]

CYBER 204 Software Security 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
The course presents the challenges, principles, mechanisms and tools to make software secure. We will discuss the main causes of vulnerabilities and the means to avoid and defend against them. The focus is on secure programming practice, including specifics for various languages, but also covering system-level defenses (architectural approaches and run-time enforcement). We will also apply software analysis and vulnerability detection tools in different scenarios.
Software Security: Read More [+]
Objectives & Outcomes

Course Objectives: *Apply and manage secure coding practices throughout software project development

*Gain a good comprehension of the landscape of software security vulnerabilities, with specifics for various programming languages and types of software applications

*Gain the ability to analyze the security of a software system and convincingly advocate about the significance of vulnerabilities

*Know representative tools for software security analysis and testing, use them in practice and understand their capabilities and limitations

*Recognize insecure programming patterns and know how to replace them with secure alternatives

Student Learning Outcomes: Students will be able to apply and manage secure coding practices throughout software project development
Students will be able to recognize insecure programming patterns and know how to replace them with secure alternatives
Students will gain a good comprehension of the landscape of software security vulnerabilities, with specifics for various programming languages and types of software applications
Students will gain the ability to analyze the security of a software system and convincingly advocate about the significance of vulnerabilities
Students will know representative tools for software security analysis and testing, use them in practice and understand their capabilities and limitations

Rules & Requirements

Prerequisites: MICS students only. CYBER 206

Credit Restrictions: Students will receive no credit for CYBER W204 after completing CYBER 204. A deficient grade in CYBER W204 may be removed by taking CYBER 204.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Formerly known as: Information and Cybersecurity W204

Software Security: Read Less [-]

CYBER 206 Programming Fundamentals for Cybersecurity 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
This course is designed to provide students with the foundational math and programming skills required to be successful in the Master of Information and Cybersecurity (MICS) program. Upon completion of this course, students will be able to write programs in Python and will gain experience reading and interpreting C programs. Students will receive a comprehensive overview of algebraic principles and will explore quantitative concepts needed for cryptography. Additionally, this course will prepare students to apply logical thinking and decompose complex problems to create programmatic solutions.
Programming Fundamentals for Cybersecurity: Read More [+]
Rules & Requirements

Prerequisites: MICS students only

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Formerly known as: Information and Cybersecurity W206

Programming Fundamentals for Cybersecurity: Read Less [-]

CYBER 207 Applied Machine Learning for Cybersecurity 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
Machine learning is a rapidly growing field at the intersection of computer science and statistics concerned with finding patterns in data. It is responsible for tremendous advances in technology, from personalized product recommendations to speech recognition in cell phones. This course provides a broad introduction to the key ideas in machine learning, with a focus on applications and concepts relevant to cybersecurity. The emphasis will be on intuition and practical examples rather than theoretical results, though some experience with probability, statistics, and linear algebra will be important.
Applied Machine Learning for Cybersecurity: Read More [+]
Rules & Requirements

Prerequisites: MICS students only. CYBER 206

Credit Restrictions: Students will receive no credit for CYBER W207 after completing CYBER 207. A deficient grade in CYBER W207 may be removed by taking CYBER 207.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Formerly known as: Information and Cybersecurity W207

Applied Machine Learning for Cybersecurity: Read Less [-]

CYBER 210 Network Security 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
Introduction to networking and security as applied to networks. Exercises cover network programming in a language of the student's choice, understanding and analyzing packet traces using tools like wireshark and mitmproxy, as well as applying security principles to analyze and determine network security. After this course, the student will have a fundamental understanding of networking, TLS and security as it applies to networked systems.
Network Security: Read More [+]
Rules & Requirements

Prerequisites: MICS students only. CYBER 206

Credit Restrictions: Students will receive no credit for CYBER W210 after completing CYBER 210. A deficient grade in CYBER W210 may be removed by taking CYBER 210.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Formerly known as: Information and Cybersecurity W210

Network Security: Read Less [-]

CYBER 211 Operating System Security 3 Units

Terms offered: Summer 2024, Fall 2023, Summer 2023
This survey of operating system security compares approaches to security taken among several modern operating systems. The course will teach how to conceptualize design issues, principles, and good practices in securing systems in today's increasingly diverse and complex computing ecosystem, which extends from things and personal devices to enterprises, with processing increasingly in the cloud. We will approach operating systems individually and then build on them so that students learn techniques for establishing trust across a set of interoperating systems.
Operating System Security: Read More [+]
Rules & Requirements

Prerequisites: MICS students only. CYBER 200

Credit Restrictions: Students will receive no credit for CYBER W211 after completing CYBER 211. A deficient grade in CYBER W211 may be removed by taking CYBER 211.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Formerly known as: Information and Cybersecurity W211

Operating System Security: Read Less [-]

CYBER 215 Usable Privacy and Security 3 Units

Terms offered: Summer 2024, Summer 2023, Fall 2022
Security and privacy systems can be made more usable by designing them with the user in mind, from the ground up. In this course, you will learn many of the common pitfalls of designing usable privacy and security systems, techniques for designing more usable systems, and how to evaluate privacy and security systems for usability. Through this course, you will learn methods for designing software systems that are more secure because they minimize the potential for human error.
Usable Privacy and Security: Read More [+]
Rules & Requirements

Prerequisites: MICS students only. CYBER 200

Credit Restrictions: Students will receive no credit for CYBER W215 after completing CYBER 215. A deficient grade in CYBER W215 may be removed by taking CYBER 215.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Formerly known as: Information and Cybersecurity W215

Usable Privacy and Security: Read Less [-]

CYBER 220 Managing Cyber Risk 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
This course offers valuable perspective for both the non-technical business manager and the technical cybersecurity or IT manager. It is the vital connector between the technical world of threats, vulnerabilities, and exploits, and the business world of board-level objectives, enterprise risk management, and organizational leadership. Now more than ever, managers have a need and responsibility to understand cyber risk.
Just as financial risks and other operational risks have to be effectively managed within an organization, cyber risk has to be managed. It spans far beyond information technology, with broad implications in the areas of organizational behavior, financial risk modeling, legal issues, and executive leadership.
Managing Cyber Risk: Read More [+]
Objectives & Outcomes

Student Learning Outcomes: Compare and employ approaches to cyber risk management and measurement.
Develop a basic cybersecurity strategic plan and understand how it aligns with the core business value of the company.
Navigate corporate structures to create a strong cyber security program and obtain senior leadership buy-in.
Understand security product verticals, identify common use cases for those products, and define requirements for acquiring solutions relevant to a business use case.
Understand the basic principles and best practices of responding to a cybersecurity incident

Rules & Requirements

Prerequisites: MICS students only. CYBER 200

Credit Restrictions: Students will receive no credit for CYBER W220 after completing CYBER 220. A deficient grade in CYBER W220 may be removed by taking CYBER 220.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Formerly known as: Information and Cybersecurity W220

Managing Cyber Risk: Read Less [-]

CYBER 233 Privacy Engineering 3 Units

Terms offered: Spring 2024, Fall 2023, Spring 2023
This course surveys privacy mechanisms applicable to systems engineering, with a particular focus on the inference threat arising due to advancements in artificial intelligence and machine learning. We will briefly discuss the history of privacy and compare two major examples of general legal frameworks for privacy from the United States and the European Union. We then survey three design frameworks of privacy that may be used to guide the design of privacy-aware information systems. Finally, we survey threat-specific technical privacy frameworks and discuss their applicability in different settings, including statistical privacy with randomized responses, anonymization techniques, semantic privacy models, and technical privacy mechanisms.
Privacy Engineering: Read More [+]
Objectives & Outcomes

Student Learning Outcomes: Students should be able to implement such privacy paradigms, and embed them in information systems during the design process and the implementation phase.
Students should be familiar with the different technical paradigms of privacy that are applicable for systems engineering.
Students should develop critical thinking about the strengths and weaknesses of the different privacy paradigms.
Students should possess the ability to read literature in the field to stay updated about the state of the art.

Rules & Requirements

Prerequisites: MICS students only. CYBER 206

Credit Restrictions: Students will receive no credit for CYBER W233 after completing CYBER 233. A deficient grade in CYBER W233 may be removed by taking CYBER 233.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Formerly known as: Information and Cybersecurity W233

Privacy Engineering: Read Less [-]

CYBER 242 New Domains of Competition: Cybersecurity and Public Policy 3 Units

Terms offered: Summer 2024, Spring 2024, Summer 2023
Cybersecurity is a primary national security and public policy concern. The government, military and private sector have various roles and responsibilities with regard to the protection of the cyber domain. In this course, students critically evaluate these roles and responsibilities, the manner in which government networks, systems, and data are secured, and the ability of national and international cybersecurity strategies and partnerships to mitigate the security risks introduced by society's increased reliance on information.
New Domains of Competition: Cybersecurity and Public Policy: Read More [+]

Objectives & Outcomes

Course Objectives: Critically assess national and international cybersecurity strategies
Describe and evaluate national and international public-private partnerships.
Discuss the developments in the cyber domain and and its protection within the context of national security.

Identify lessons learned and recommend ways to improve national and international approaches to cybersecurity.
Identify the roles and responsibilities of the military, government, and the private sector in cybersecurity.
Utilize an evidence-based approach to analyze the security of government networks and systems and privacy of retained data.

Rules & Requirements

Prerequisites: MICS students only. CYBER 200

Credit Restrictions: Students will receive no credit for CYBER W242 after completing CYBER 242. A deficient grade in CYBER W242 may be removed by taking CYBER 242.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Formerly known as: Information and Cybersecurity W242

New Domains of Competition: Cybersecurity and Public Policy: Read Less [-]

CYBER 252 Security Operations 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
This course will focus on understanding key areas within Security Operations from a management perspective. Upon completion of this course, students will understand implementation and maintenance best practices for security operations services such as incident response, internal investigations, security analysis, threat intelligence and digital forensics. Students will not only get hands-on experience within each discipline but will also understand how to recruit and train others within a security operations center or security team.
Security Operations: Read More [+]

Objectives & Outcomes

Course Objectives: Demonstrate data analysis as it pertains to identifying and responding to cyber-attacks.
Effectively apply knowledge in simulated real-world conditions to protect and defend complex networks and infrastructures, including in the cloud.
Implement incident response and digital forensics techniques.

Rules & Requirements

Prerequisites: MICS students only. CYBER 200, CYBER 204, and CYBER 210

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Security Operations: Read Less [-]

CYBER 284 Web Application Security Assessment 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
Web applications play a vital role in every modern organization. If an organization does not properly test its web applications to identify security flaws, adversaries may be able to compromise these applications damaging functionality and accessing sensitive data. The focus of this course is on developing practical web application security testing skills required to assess a web application's security posture and convincingly demonstrate the business impact of discovered vulnerabilities, if exploited. The course includes both lectures and a variety of demonstrations and hands-on exercises in finding web application security vulnerabilities. During the course, students learn about assessment tools and methodologies.
Web Application Security Assessment: Read More [+]

Objectives & Outcomes

Course Objectives: Develop skills in writing web application security assessment reports
Discover and exploit key web application flaws
Gain a good comprehension of web application security vulnerabilities
Learn to apply a repeatable methodology to deliver enterprise-level web application security assessment
Learn to explain potential impact of web application vulnerabilities

Rules & Requirements

Prerequisites: MICS students only. CYBER 204

Repeat rules: Course may be repeated for credit with instructor consent.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Web Application Security Assessment: Read Less [-]

CYBER 289 Public Interest Cybersecurity: The Citizen Clinic Practicum 3 Units

Terms offered: Spring 2024, Fall 2023, Spring 2023
This course provides students with real-world experience assisting politically vulnerable organizations and persons around the world to develop and implement sound cybersecurity practices. In the classroom, students study basic theories and practices of digital security, intricacies of protecting largely under-resourced organizations, and tools needed to manage risk in complex political, sociological, legal, and ethical contexts. In the clinic, students work in teams supervised by Clinic staff to provide direct cybersecurity assistance to civil society organizations. We emphasize pragmatic, workable solutions that take into account the unique needs of each partner organization.
Public Interest Cybersecurity: The Citizen Clinic Practicum: Read More [+]

Rules & Requirements

Prerequisites: MICS students only

Credit Restrictions: Students will receive no credit for CYBER W289 after completing CYBER 289. A deficient grade in CYBER W289 may be removed by taking CYBER 289.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Formerly known as: Information and Cybersecurity W289

Public Interest Cybersecurity: The Citizen Clinic Practicum: Read Less [-]

CYBER 290 Special Topics 3 Units

Terms offered: Fall 2022, Summer 2022, Fall 2021
Specific topics, may vary from section to section, year to year.
Special Topics: Read More [+]

Rules & Requirements

Prerequisites: MICS students only

Repeat rules: Course may be repeated for credit when topic changes. Students may enroll in multiple sections of this course within the same semester.

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Special Topics: Read Less [-]

CYBER 295 Capstone 3 Units

Terms offered: Summer 2024, Spring 2024, Fall 2023
This capstone course will cement skills and knowledge learned throughout the Master of Information and Cybersecurity program: core cybersecurity technical skills, understanding of the societal factors that impact the cybersecurity domain and how cybersecurity issues impact humans, and professional skills such as problem-solving, communication, influencing, collaboration, and group management – to prepare students for success in the field. The centerpiece is a semester-long group project in which teams of students propose and select a complex cybersecurity issue and apply multi-faceted analysis and problem-solving to identify, assess, and manage risk and deliver impact.
Capstone: Read More [+]

Objectives & Outcomes

Student Learning Outcomes: Engage in a highly collaborative process of idea generation, information sharing, and feedback that replicates key aspects of managing cybersecurity in an organizational setting.
Learn or reinforce communication, influencing, and management skills.
Practice using multi-faceted problem-solving skills to address complex cybersecurity issues.

Rules & Requirements

Prerequisites: MICS students only. CYBER 200, CYBER 202, CYBER 204, CYBER 206, and CYBER 210. Must be taken in final term of the MICS program

Hours & Format

Fall and/or spring: 14 weeks - 3 hours of lecture per week

Summer: 14 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Cybersecurity/Graduate

Grading: Letter grade.

Formerly known as: Information and Cybersecurity W295

Capstone: Read Less [-]