# INFORMATION SCIENCE

Undergraduate students majoring in information science will explore the intersection of human values and the information technologies that influence everyday life. Students will synthesize knowledge and skills integrating design, computation and data analysis. Students will investigate, understand and engage contemporary issues around our increasingly digitized life. Topics include communicating with data, design, quantitative and qualitative data collection, and analysis, how culture and history shape technology, ethics, and technology for social good. This project-centered major prepares students with a professional portfolio and project experience for in-demand careers.

**Course code for this program is INFO.**

## Bachelor's Degree

- Information Science - Bachelor of Science (BS) (https://catalog.colorado.edu/undergraduate/colleges-schools/communication-media-design-information/programs-study/information-science/information-science-bachelor-science-bs/)

## Minors

- Data Science - Minor (https://catalog.colorado.edu/undergraduate/colleges-schools/communication-media-design-information/programs-study/information-science/data-science-minor/)
- Information Science - Minor (https://catalog.colorado.edu/undergraduate/colleges-schools/communication-media-design-information/programs-study/information-science/information-science-minor/)

## Faculty

While many faculty teach both undergraduate and graduate students, some instruct students at the undergraduate level only. For more information, contact the faculty member's home department.

Barker, Lecia Jane (https://experts.colorado.edu/display/fisid_101367/)
Associate Professor; PhD, University of Colorado Boulder

Brubaker, Jed Richards (https://experts.colorado.edu/display/fisid_156193/)
Assistant Professor; PhD, University of California, Irvine

Burke, Robin D. (https://experts.colorado.edu/display/fisid_165005/)
Chair, Professor; PhD, Northwestern University

Carruth, Christopher (https://experts.colorado.edu/display/fisid_153706/)
Instructor; MS, University of Colorado Boulder

Devendorf, Laura (https://experts.colorado.edu/display/fisid_158564/)
Assistant Professor; PhD, University of California, Berkeley

Fiesler, Casey Lynn (https://experts.colorado.edu/display/fisid_155950/)
Assistant Professor, Associate Chair; PhD, Georgia Institute of Technology

Iyasele, Abel
Teaching Assistant Professor; MBA, University of Dundee (UK)

Keegan, Brian (https://experts.colorado.edu/display/fisid_158122/)
Assistant Professor; PhD, Northwestern University

Palen, Leysia A. (https://experts.colorado.edu/display/fisid_114604/)
Professor; PhD, University of California, Irvine

Roque, Ricarose (https://experts.colorado.edu/display/fisid_158315/)
Assistant Professor; PhD, Massachusetts Institute of Technology

Voida, Amy Kathryn Mitchell (https://experts.colorado.edu/display/fisid_155855/)
Associate Professor; PhD, Georgia Institute of Technology

Voida, Stephen A. (https://experts.colorado.edu/display/fisid_155856/)
Assistant Professor; PhD, Georgia Institute of Technology

## Courses

### INFO 1101 (3) Computation in Society
Introduces students to modern information and communication technology, the basic principles of software and programming, the fundamental role of algorithms in modern society, computational reasoning, the major organizations in the information sector and fundamental interactions between humans and information technology. Appropriate for students with limited prior experience with computing. Fulfills the CMDI computing requirement.
**Grading Basis:** Letter Grade

### INFO 1111 (4) Introduction to Information Science: Understanding the World Through Data
Provides a hands-on survey of key concepts and theories in Information Science, including the nature of information, everyday experience of data, technologies that generate data, and how data are conveyed and represented. Students will critically examine texts, systems, and interpretations of data from multidisciplinary perspectives. Through design explorations, activities, and group projects, students will develop facility representing and transforming information.
**Grading Basis:** Letter Grade

### INFO 1121 (4) Designing Interactions
Provides an introduction to human-centered design and the universal requirements of interactions with data, information and technologies. Studio experiences challenge students to consider the impact that information and computing technology design choices have on a) enabling diverse audiences to access, manipulate and experience information, and b) how differences get encoded by data and technology, ultimately reflecting biases.
**Grading Basis:** Letter Grade

### INFO 1201 (4) Computational Reasoning
Introduces principles of computational thinking through the manipulation, transformation, and creation of media artifacts, such as images, sounds, and web pages. Students will be exposed to a high-level overview of algorithms, functions, data structures, recursion, and object-oriented computer programming through a series of assignments that emphasize the use of computation as a means of creative expression.

### INFO 1301 (3) Statistics for Information Science
Introduces concepts and techniques for characterizing and quantifying data. Students will learn to summarize, visualize, and interpret data with descriptive statistics and will learn the foundations of statistical inference and modeling. Topics include statistical distributions and the normal distribution, hypothesis testing and statistical significance, and linear regression.
**Grading Basis:** Letter Grade

**INFO 1701 (4) Programming for Information Science 1**
Introduces principles of programming for information and data science using the Python programming language. Students will learn to understand, modify and create Python programs and will learn about programmatic techniques for exploring, discovering, and communicating information contained within various data sources.
**Equivalent - Duplicate Degree Credit Not Granted:** LING 1200 or CSCI 1200

**INFO 2001 (1) Information Science Portfolio and Professional Development**
Facilitates career development through the disciplined reflection about and presentation of one's work using a variety of modalities across a variety of media. Students will be introduced to individuals and organizations representing a diversity of career paths in information science.
**Requisites:** Restricted to Information Science (INFO) majors and minors.
**Grading Basis:** Letter Grade

**INFO 2131 (3) Information Ecosystems**
Introduces students to techniques for working with communities, organizations, and institutions in the transformative use of information. Develops students' ability to listen for (and mediate among) diverse, discordant voices and values. Employs qualitative research, design explorations, activities, and small group projects as students examine, navigate, and design for complex interactions across ecosystems.
**Grading Basis:** Letter Grade

**INFO 2201 (4) Programming for Information Science 2**
Surveys techniques for accessing, exploring, and analyzing real-world data in various formats. Students will acquire, process, and visualize this data in order to communicate their findings to a general audience. Requires demonstrated proficiency with introductory computer programming.
**Requisites:** Requires prerequisite course of INFO 1701 or CSCI 1300 or CSCI 1200 or LING 1200 or ATLS 1300 or APPM 1650 (minimum grade C-).

**INFO 2301 (3) Quantitative Reasoning for Information Science**
Introduces methods for quantifying and analyzing different types of data, covering foundational concepts in discrete mathematics, probability, and predictive modeling, along with complementary computational skills to apply these concepts to real problems. Covers counting and combinatorics, logic, set theory, introductory probability, common probability distributions, regression, and model validation. Requires demonstrated proficiency with introductory computer programming.
**Requisites:** Requires prerequisite course of INFO 1701 or CSCI 1200 or CSCI 1300 or LING 1200 or ATLS 1300 (all minimum grade C-).
**Grading Basis:** Letter Grade

**INFO 3101 (3) History of Computing and Information**
Focusing on two topics: the changing role of information in everyday life over time and the increasing role of information in disciplinary studies such as social science, engineering, computer science, mathematics, digital humanities. Examines information related academic disciplines, businesses, industries and technologies from multiple perspectives from the 17th century to the present.
**Equivalent - Duplicate Degree Credit Not Granted:** MDST 3101

**INFO 3401 (3) Information Exploration**
Teaches students how to use information to identify interesting real world problems and to generate insight. Students will learn to find, collect, assemble and organize data to inspire new questions, make predictions, generate deliverables, and work towards solutions. They will learn to appropriately apply different methods (including computational, statistical and qualitative) for exploratory data analysis in a variety of domains.
**Requisites:** Requires prerequisite course of INFO 2201 and any one of INFO 2301, GEOG 4023, PSCI 3075, PSYC 3111 or SOCY 3201 (all minimum grade C-). Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 3402 (3) Information Exposition**
Teaches students to communicate information to a wider audience and construct stories with data across a variety of domains. Students will learn to use data for rhetorical purposes, applying visual, statistical and interpretative methods. Students will learn to think critically about ethical and social implications of using data in expository media, including identification of bias.
**Requisites:** Requires prerequisite course of INFO 2201 and any one of INFO 2301, GEOG 4023, PSCI 3075, PSYC 3111 or SOCY 3201 (all minimum grade C-). Restricted to students with 57-180 credits (Juniors or Seniors).

**INFO 3501 (3) Open Collaboration**
Analyzes the mechanisms of peer production and crowdsourcing systems like Wikipedia and OpenStreetMap. Students will investigate how these crowdsourced platforms work socially and technically, develop skills using tools for their analysis and critically evaluate platform and community limitations.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5501
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 3502 (3) Online Communities**
Explores practical and theoretical topics in online communities through inquiry into one or more particular online communities. Student projects will explore online communities as social and technical systems, including their alignment with conceptualizations of community, expressed and apparent interests, nature of membership and participation, history, participants' motivations for involvement, and explicit, implicit, and infrastructural features that enable and constrain behaviors.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5502
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 3503 (3) Everyday Information Behavior**
Familiarizes students with practical and theoretical topics in the discipline of information behavior and its application to everyday events, activities and environments. Explores the information dimension of various everyday activities such as buying a car, playing a game or looking up health information online. Students learn to analyze the informational dimensions that occur in their everyday lives.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5503
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 3504 (3) Digital Identity**
Explores and analyzes identity in a digital era. Through applied research, students investigate both social and technical aspects of how identity is captured, represented and experienced through technology using theoretical, empirical and design-based inquiry. Methods and platforms studied vary by semester.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5504
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 3505 (3) Designing for Creative Learning**
Analyzes learning technologies, discusses learning theories and develops prototypes to investigate strategies for engaging people in creative and inclusive learning experiences. Students explore design, learning and technology by examining sociotechnical systems like construction kits, online communities and makerspaces with a critical lens on equity and inclusion. Studio format enables students to apply constructionist ideas into the design of technology-enabled environments.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5505
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 3506 (3) Online Fandom**
Explores and analyzes fan communities in a digital context. Through applied research, students will investigate online spaces devoted to participatory and remix culture, media fandom, and fan creation. This class will draw concepts and methods from fan studies, social computing, ethnography, data science, and sociology to drive project-based inquiry.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5506
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 3507 (3) Foundations and Futures in Digital Humanities**
Explore foundational methods and major movements in digital humanities. This course discusses the impact of digitization on humanist inquiry and introduces students to techniques for analyzing digital data across literature, history, and art. Emphasizes key methodologies, technical practices, and the creation of media artifacts. Familiarity with foundational programming concepts is recommended. Degree credit not granted for both this course and INFO 5507.
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 3508 (3) Personal Information Management**
Explores and analyzes personal information management: the organization of our digital "stuff", including course assignments, internship documents, files shared with others via the cloud, social media posts, step counts captured by smartwatches, and location traces collected by phones. In this course, students will participate in a semester-long design research project exploring ways to re-imagine how technology handles our digital stuff.
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 3509 (3) Personal Health Informatics**
Surveys the theoretical and practical foundations for the design of patient-centered health and wellness technologies. Students will conduct an in-depth exploration of the multidisciplinary research literature informing the design of these systems, participate in discussions about the practical information management and interaction design challenges that must be addressed in their implementation, and demonstrate their learning through a variety of research study- and system-design activities. Formerly offered as a special topics course.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5509
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 3510 (3) Music as Information**
Music is universal throughout all of society. This class will utilize the Python programming language to explore information that is inherent in and generated by music. Topics will cover various types of information related to music itself as well as the production of music which may include topics such as consumer-related music data, music recommender systems, sonification, and brain-music interfaces.
**Requisites:** Requires prerequisite course of INFO 2201 (minimum grade C-). Restricted to students with 57-180 credits (Junior or Senior) only.

**INFO 3702 (3) Cognitive Science**
Introduces cognitive science, drawing from psychology, philosophy, artificial intelligence, neuroscience, and linguistics. Studies the linguistic relativity hypothesis, consciousness, categorization, linguistic rules, the mind-body problem, nature versus nurture, conceptual structure and metaphor, logic/problem solving and judgment. Emphasizes the nature, implications and limitations of the computational model of mind.
**Equivalent - Duplicate Degree Credit Not Granted:** CSCI 3702 and LING 3005 and PHIL 3310 and PSYC 3005 and SLHS 3003 and CSPB 3702
**Requisites:** Restricted to INFO majors with 57-180 credits.

**INFO 3901 (3) Digital Legacy Clinic**
Gain hands-on experience running CU¿s Digital Legacy Clinic, supporting end-of-life planning and digital affairs management. Students will learn to establish a startup, collaborate effectively, and solve common startup challenges. Through team-based work, students will gain practical skills in service design, collaboration, technical research, and client support.
**Repeatable:** Repeatable for up to 12.00 total credit hours.
**Requisites:** Restricted to students with minimum of 90 credit hours taken (Seniors) and Information Science (INFO) majors.
**Grading Basis:** Letter Grade

**INFO 4001 (1) Information Science Portfolio and Professional Development**
Facilitates career development through the disciplined reflection about and presentation of one's work using a variety of modalities across a variety of media. Students will be introduced to individuals and organizations representing a diversity of career paths in information science.
**Requisites:** Requires prerequisite course of INFO 2001 (minimum grade C-). Restricted to Information Science (INFO) majors and minors.
**Grading Basis:** Letter Grade

**INFO 4601 (3) Information Ethics and Policy**
Explores ethical and legal complexities of information and communication technology. By combining real-world inquiry with creative speculation, students will probe everyday ethical dilemmas they face as digital consumers, creators and coders, as well as relevant policy. Explores themes such as privacy, intellectual property, social justice, free speech, artificial intelligence, social media and ethical lessons from science fiction.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5601
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 4602 (3) Information Visualization**
Explores the design, development and evaluation of information visualizations. Covers visual representations of data and provides hands-on experience with using and building exploratory tools and data narratives. Students create visualizations for a variety of domains and applications, working with stakeholders and their data. Covers interactive systems, user-centered and graphic design, perception, data storytelling and analysis, and insight generation. Programming knowledge is strongly encouraged.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5602
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 4603 (3) Survey Research Design**
Familiarizes students with practical and theoretical topics in using survey methods for conducting information science research. Through discussion and real world assignments, students will learn when and why to use surveys for collecting data; effective, efficient and ethical approaches to maximizing response; sampling issues; development of valid items and scales; and how to implement, analyze and report on survey data collection.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5603
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 4604 (3) Applied Machine Learning**
Introduces algorithms and tools for building intelligent computational systems. Methods will be surveyed for classification, regression and clustering in the context of applications such as document filtering and image recognition. Students will learn the theoretical underpinnings of common algorithms (drawing from mathematical disciplines including statistics and optimization) as well as the skills to apply machine learning in practice.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5604
**Requisites:** Requires prerequisite courses of INFO 2201 or INFO 2301 or CSCI 2270 (all minimum grade C-). Restricted to students with 57-180 credits (Junior or Senior).
**Grading Basis:** Letter Grade

**INFO 4605 (3) Ethnographic Research in Applied Settings**
Demonstrates the power of ethnography as an investigative approach that is useful in design, evaluation and question formation for information scientists across all workforce sectors. Teaches students how to be keen observers of the unusual as well as the everyday to reveal meaningful insights that elaborate information science projects.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5605
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 4606 (3) Critical Technical Practice**
Surveys design theory and methods that can be used to question relationships between technology, culture, and the environment. Students will discuss readings and synthesize those readings through design exercises. The course will equip students with resources for thinking more critically and creatively about design and possible future human-technology relationships.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5606, ATLS 4606, and ATLS 5606
**Grading Basis:** Letter Grade

**INFO 4607 (3) Software Engineering for Data-Centered Systems**
Explores design and engineering of systems for data storage and analysis. Introduces fundamental development concepts used in real-world data systems. By combining software engineering with knowledge from data science and human-centered computing, prepares students to develop systems, interpret and modify codebases, understand modern concepts for managing data at scale, and work in teams to create cutting-edge applications for consumer use.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5607
**Requisites:** Requires prerequisites of INFO 2201 or CSCI 2270 (all minimum grade C-). Restricted to students with 57-180 credits (Junior or Senior)
**Grading Basis:** Letter Grade

**INFO 4608 (3) Community-Based Design**
Surveys techniques in cooperative design with community members as collaborators rather than subjects. Students will explore approaches such as participatory design and co-design. Students will work in teams in partnership with community stakeholders to create tools, experiences, or systems that meet the needs of communities, contribute to social change, and/or lead to advancing academic knowledge.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5608
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 4609 (3) User-Centered Design**
Surveys the theoretical and practical foundations of human-computer interaction and user-centered design. Students learn theories of interaction (including cognitive, organizational, collaborative, and task-based approaches), user interface design techniques, design guidelines, and usability testing in the context of developing technology. Course content is explored through a variety of interfaces (desktop, mobile, touch, vision, audio, etc.) and contexts (personal, organizational, cross-cultural, etc.).
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5609
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 4611 (3) Ubiquitous Computing Experience Design**
Introduces the field of ubiquitous computing, including sensors, ambient displays, tangibles, mobility, location awareness and context awareness. These topics are explored from a user-centered design perspectives, focusing on how a situated models of computing affect requirements gathering, interaction design, prototyping and evaluation. Students gain mastery with contemporary "UbiComp" technologies and learn to incorporate them into a user-centered design process.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5611
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 4613 (3) Network Science**
Introduces theories and methods for analyzing relational data in social, information, and other complex networks. Students will understand the processes and theories explaining network structure and dynamics as well as develop skills analyzing and visualizing real-world network data. No math or statistics training required, but course will assume familiarity with Python.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5613
**Requisites:** Requires prerequisite course of INFO 3402 (minimum grade C-). Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 4614 (3) Information and Data Retrieval Systems**
Examines techniques for managing and accessing information and data of a variety of types for a range of applications. Students will study retrieval models for text and for structured and unstructured data, covering creation, management and querying techniques for each, and how to apply each model in data-intensive applications. Students will also consider ethical aspects of data management including data protection, data rights and user privacy.
**Requisites:** Requires prerequisite course of INFO 2201 (minimum grade C-).

**INFO 4615 (3) Fair Machine Learning**
Equips students with the foundational knowledge needed to understand fairness in machine learning from an interdisciplinary perspective and the essential skills necessary to address fairness challenges in practice. Provides an overview of core concepts concerning fair machine learning, from defining fairness to the measurement and mitigation of fairness-related harms. Proficiency in Python programming and prior coursework in machine learning required.
**Grading Basis:** Letter Grade

**INFO 4617 (3) Web Data Science**
The internet makes many kinds of information easy to access. The ability to retrieve, parse, and analyze this information is a valuable skill for data scientists. This course will provide an overview of computational tools and practices for transforming web documents and APIs into data for common research designs.
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 4620 (3) Race and Technology**
This course is designed with the understanding that race and racial inequality have been central to how societies and societal systems of power have been shaped and reshaped over time. Students will critically examine how race is created by and through sociotechnical systems. Students will explore how the design, implementation, and use of digital platforms and their data continue to perpetuate and embody white, cisgender, heteronormative systems of power. This course will cover a wide range of foundational and emergent scholarship¿giving voice to Scholars of Color¿providing students with a foundation through which they can continue to critique and explore sociotechnical and other societal arrangements more broadly.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5620
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).

**INFO 4651 (3) Fundamental Concepts in Data Science**
This intensive course provides a general understanding of the mathematical concepts required for success in data science. This course will cover a wide range of mathematical tools in data science including an overview of calculus and linear algebra along with selected topics from numerical analysis. The course will also explore computational implementations of these ideas. This course provides a bridge for students without these advanced math concepts to learn to apply them within a data science career or within a graduate program in data science.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5651
**Requisites:** Requires prerequisite course of INFO 1301 or ANTH 4000 or GEOG 3023 or PSCI 2075 or PSYC 2111 or SOCY 2061 (minimum grade C-). Restricted to juniors and seniors.

**INFO 4652 (3) Statistical Programming in R**
This intensive course covers foundational data science tools and techniques in the R programming language, including acquiring, cleaning, exploring, and analyzing data, programming, and conducting reproducible research. The course will emphasize the use of data management best practices such as the tidyverse toolkit in R.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5652
**Requisites:** Requires prerequisite course of INFO 1301 or ANTH 4000 or GEOG 3023 or PSCI 2075 or PSYC 2111 or SOCY 2061 (minimum grade C-). Restricted to juniors and seniors.

**INFO 4700 (3) Senior Capstone**
Provides senior level INFO students an opportunity to demonstrate the culmination of their learning in the major by designing and implementing a significant information system or developing a research question, typically in response to a problem of personal interest related to or informed by their secondary area of specialization. Reinforces project planning, public presentation and ethic skills.
**Requisites:** Restricted to Information Science (INFO) majors only with a minimum of 90 hours.
**Grading Basis:** Letter Grade

**INFO 4747 (4) Defamiliarizing Data: The Ethnography and Design of Making Data Strange**
Introduces students to the design and use of data in an unfamiliar, international context. Develops students¿ ethnographic and design skills for defamiliarizing data¿seeing, characterizing, and designing for data in ways that render it as unfamiliar and strange in order to gain new perspectives and insights about those data and the contexts in which they are produced and consumed. This course includes international travel.
**Equivalent - Duplicate Degree Credit Not Granted:** INFO 5747

**INFO 4800 (1-3) Leadership Practicum in Information Science**
Equips students for taking on leadership roles in the interdisciplinary context of information science. Students will learn to facilitate learning among students with diverse backgrounds and expertise, developing communication and mentoring skills and gaining exposure to a variety of learner-centered design strategies and pedagogical approaches. Enrollment is by invitation and at the discretion of the instructor.
**Repeatable:** Repeatable for up to 12.00 total credit hours. Allows multiple enrollment in term.
**Requisites:** Restricted to Information Science (INFO) majors only.
**Grading Basis:** Letter Grade

**INFO 4841 (1-6) Undergraduate Independent Study**
Involves in-depth independent research and/or project work completed under the direction of a faculty member that demonstrates learning at the upper-division level within the discipline. Department consent required.
**Repeatable:** Repeatable for up to 6.00 total credit hours. Allows multiple enrollment in term.
**Requisites:** Restricted to Information Science (INFO) majors only.
**Grading Basis:** Letter Grade

**INFO 4871 (1-4) Special Topics**
Special topics.
**Repeatable:** Repeatable for up to 15.00 total credit hours. Allows multiple enrollment in term.
**Requisites:** Restricted to students with 57-180 credits (Juniors or Seniors).
**Grading Basis:** Letter Grade

**INFO 4900 (1-6) Research Experience in Information Science**
Provides research experience in information science. Students will contribute to the construction of new knowledge, helping to answer current research questions or to solve contemporary problems in the domain. Enrollment is by invitation and discretion of the advising faculty member.
**Repeatable:** Repeatable for up to 12.00 total credit hours.
**Grading Basis:** Letter Grade

**INFO 4950 (1-6) Honors Thesis**
Involves the preparation and oral defense of an honors thesis, based on faculty-supervised original research, including final phases of the research project. Students receive guidance on research, the process of thesis writing, presentation of research results, and thesis defense. Thesis requirements and the role of the CMDI Honors Council will be discussed. Honors students share written, visual, and oral drafts for peer and faculty feedback and offer feedback to their peers.
**Repeatable:** Repeatable for up to 6.00 total credit hours.
**Requisites:** Restricted to students with 55-180 credits (Juniors or Seniors) and Information Science majors only.
**Grading Basis:** Letter Grade