IS - INFORMATION SCIENCES

IS Class Schedule (https://courses.illinois.edu/schedule/DEFAULT/DEFAULT/IS/)

Courses

IS 100 Exploring the iSchool with a Human-Centered Lens credit: 1 Hour. (https://courses.illinois.edu/schedule/terms/IS/100/)
This course introduces students to the School of Information Sciences (iSchool). Students will explore career and professional development within information sciences, building their leadership and collaborative skills, and building a network within and beyond the iSchool. Through a human centered design project focused on an information science problem, students will gain experience and a better understanding of the process to develop an innovative solution addressing a societal need. Prerequisite: Restricted to Majors Only; First Semester Freshman, Intercollegiate and Off-Campus Transfer Students Only.

IS 101 Introduction to Information Sciences credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/101/)
This course provides an introduction to the field of information science and the major. It offers both historical and contemporary context for understanding the role of information in society. Focus is placed upon critical analysis of information problems as well as understanding the creation, use, and distribution of information in business, policy, education, government, health, and other sectors.
This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

IS 107 Data Science Discovery credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/107/)
Same as CS 107 and STAT 107. See STAT 107.
This course satisfies the General Education Criteria for:
Quantitative Reasoning I

IS 142 Social History of Games and Gaming credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/142/)
A survey of the history of gaming from the ancient world through the twentieth century, and its impact on science, society, and culture.

IS 145 Mapping Inequalities credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/145/)
Immerses students in the history of Inequality in the United States through mapping the geographic, historical, and/or social movement of minority cultures using quantitative and social science methods. Topics vary by section, but each section emphasizes experiential learning through community-engaged scholarship, field-trips, or computer programming projects. No previous computer programming experience is required. No previous computer programming experience is required. Prerequisite: This course is intended for first and second year students.
This course satisfies the General Education Criteria for:
Quantitative Reasoning II
Social Beh Sci - Soc Sci
Cultural Studies - US Minority

IS 189 Independent Study credit: 0 to 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/189/)
Individual study in a subject related to information sciences not covered in normal course offerings. Approved for Letter and S/U grading. May be repeated in separate terms to a maximum of 6 hours. Prerequisite: Consent of instructor. Submission of "Request to Enroll in IS Independent Study".

IS 199 Undergraduate Open Seminar credit: 1 to 5 Hours. (https://courses.illinois.edu/schedule/terms/IS/199/)
Undergraduate Open Seminar. Additional fees may apply. See Class Schedule. May be repeated.

IS 200 Professional Skills in Information Science credit: 1 or 2 Hours. (https://courses.illinois.edu/schedule/terms/IS/200/)
Provides in-depth career exploration and skill development. Focused on connecting students with various speakers and concepts, the topics aim to help students build a strong foundation of essential skills and knowledge in information science. This course will help prepare students for experiential learning courses and internships, and is relevant for undergraduate students at all stages of their academic career. May be repeated (limit of 3 experiential hours count towards IS electives). Prerequisite: For Information Science Majors Only.

IS 202 Social Aspects Info Tech credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/202/)
Explores the way in which information technologies have and are transforming society and how these affect a range of social, political and economic issues from the individual to societal levels. Same as INFO 202 and MACS 202.
This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

IS 203 Analytical Foundations for Information Problems credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/203/)
A survey of mathematical topics for students in information sciences. Provides an introduction to sets, relations, graphs, grammars, probability, and propositional and predicate logic. These topics relate to applications in information modeling, representation and expression. Prerequisite: MATH 112 or Required ALEKS Score.
This course satisfies the General Education Criteria for:
Quantitative Reasoning II

IS 204 Research Design for Information Sciences credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/204/)
This course provides an introduction to different approaches to research in the information sciences, including social science methods, data and text mining, digital humanities, historical approaches, and others. Topics include methods for evaluating research, developing research questions, selecting research methods, conducting research ethically, and communicating findings clearly and effectively through words, graphics, and other visualizations.

IS 205 Programming for Information Problems credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/205/)
Covers common data processing methods and computing concepts used in the information sciences. Evaluates strengths and weaknesses of the techniques in the context of our discipline. No prior programming background is assumed. Course will use the Python programming language.

IS 206 Introduction to Database Concepts & Applications credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/206/)
Introduction to database technology concepts and architecture. Explore data types and reading/writing database layout descriptions. Discussion of database ethics and privacy concerns. Comparison of different database systems a user might encounter including RDBMS, XML/RDF/JSON, NOSQL, and Graph database systems. Labs involving common database tools and exercises in SQL. Prerequisite: Some basic programming experience recommended.

IS 226 Introduction to HCI credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/226/)
This course introduces students to fundamental theories and techniques in Human-Computer Interaction (HCI). This course presents basic tools and methods for creating, designing, prototyping, and evaluating user interfaces to computing applications and web sites. Students will explore course content by conducting individual and group hands-on projects. Assignments involving prototyping can be implemented by self-selected solutions, e.g. Axure, JavaScript. Students from all backgrounds are welcomed.

IS 229 Web Design Fundamentals credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/229/)
In this course students will learn the principles and methodologies of modern Web design and development, while also becoming familiar with the history of the Web. Students will develop useful practical skills through hands-on engagement with open-source tools, platforms, and resources, while also acquiring a critical understanding of current challenges around such topics as web-standards, security, and accessibility. Students will also become familiar with philosophical models and practical frameworks for creating human-centered systems and will apply such constructively critical understandings in their own web design projects.
This course satisfies the General Education Criteria for:
Quantitative Reasoning I

IS 234 Introduction to Risk and Cybersecurity credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/234/)
Cyber risk, cybersecurity and related concepts create a foundation for exploring the importance of threat awareness, intelligence and identification to personal and organizational security postures. Topics including password hygiene, threat actors, data collection, use and sharing and the CIA Triad, Cyber Kill Chain, Attack Vectors and Attack Surfaces are explored. The role of governments, human behavior, frameworks, standards, systems and compliance requirements all inform security decisions while creating significant career options for those interested.

IS 236 User Research & Evaluation credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/236/)
This course will teach students about user research and evaluation. They will learn to apply various user research methods, gather and understand user requirements and needs for a wide range of user populations, especially those that are under-served (e.g., children, older adults, people with disabilities), conduct user evaluations of prototypes and interactive systems, and communicate effectively about the research insights and make actionable design suggestions. Prerequisite: IS 204, or IS 226, or equivalent course.

IS 249 BSIS Practicum credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/249/)
A professional field experience program designed to provide the student with the opportunity to work in a professional environment under the supervision of an experienced information professional with the guidance of a faculty advisor. This opportunity allows students to integrate the theory and knowledge of course content with the application of principles and practices in a work environment, including these specific objectives Approved for S/U grading only. Prerequisite: IS 101 or IS 202. Restricted to BSIS students only.

IS 265 Innovation Illinois: From Accessible Design to Supercomputing Cultures credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/265/)
Same as CS 265 and MACS 265. See MACS 265.

IS 266 Community Innovation credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/266/)
How do communities contribute to transformative, world-changing innovations? Why is their participation indispensable for fostering change? And what makes change ultimately transformative across diverse spaces and time? Community Innovation explores how engagement with interdisciplinary communities and collaborations, as well as histories of globally-changing local innovations from the Illinois were critical to fostering and sustaining new social and technical practices across space and time. Same as CS 266 and MACS 266.
This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci
Cultural Studies - Western

IS 269 BSIS Internship credit: 0 Hours. (https://courses.illinois.edu/schedule/terms/IS/269/)
Designed to provide students an opportunity to apply the skills and concepts learned in Information Sciences classes to a work environment. Students will complete internships of their choosing under supervision and will be expected to complete activities online including a reflective paper and presentation. The goal of this course is to provide an experience that will form a connection between a student's academic career and career goals for the future. Approved for S/U grading only. May be repeated. Prerequisite: IS 101 or IS 202. Restricted to BSIS students only.

IS 299 Information Science Study Abroad credit: 0 to 18 Hours. (https://courses.illinois.edu/schedule/terms/IS/299/)
Provides campus credit toward the undergraduate degree for study at accredited foreign institutions or approved overseas programs. Final determination of credit and its application toward the degree is made by the School of Information Sciences (iSchool) office after a review of the student's work abroad. Approved for Letter and S/U grading. May be repeated in separate terms to a maximum of 44 hours. Maximum of 18 hours per regular term. Summer session, 0 to 8 hours. Prerequisite: One academic year (or one semester in the case of transfer students) of full-time residence at UIUC, good academic standing, and prior approval of the School of Information Sciences. Consent of major department, school, and Study Abroad Office.

IS 304 Advanced Research Design credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/304/)
This course is a practical, hands-on class in social science research methods in the field of information sciences. Students will learn both qualitative and quantitative methods, including survey design, interview techniques, and observation strategies. Examples and practical exercises will be geared towards future work as information professionals and will enable students to design and apply research strategies that help them understand the intersections between people, information, and technologies. Prerequisite: IS 204, or IS 236, or similar research course.

IS 305 Programming for Information Problems II credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/305/)
Continuing coverage of common data processing and computing methods in the information sciences. Building on programming skills from IS 205, additional programming patterns will be explored, and additional tools like the command line and version control will be explored in the context of information problems. Course will be in Python. Some Python review will be provided, but students without prior experience in Python should contact the school or instructor for review material. Prerequisite: IS 205, or CS 101, or CS 105, or CS 125, or ECE 120, or equivalent. Basic programming (Python) proficiency required.
This course satisfies the General Education Criteria for:
Quantitative Reasoning I

IS 308 Race, Gender, and Information Technology credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/308/)
In this course we will critically examine the ways in which information and communication technologies (ICTs) are shaped by – and help to shape – social relations of race and gender; and we will extend our review to other categories of identity and exclusion as well, such as age, ability, geography and ethnicity. We will also explore the various benefits and burdens of the information society and how these are socially distributed, and conduct case-studies of policies, practices, and programs designed to enhance opportunities and/or mitigate disadvantages through the creative or disruptive use of ICTs. Directed and supervised investigation of selected topics in information studies that may include among others computers and culture; information policy; community information systems; production, retrieval and evaluation of scientific or social science knowledge; computer-mediated communication; and computer-supported cooperative work. Prerequisite: IS 202 Highly recommended. Sophomore standing.

IS 309 Computers and Culture credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/309/)
This course explores cultural ideas about computers, including hopes and fears about the effects of computers on our lives. We will analyze images of computers in fiction and movies. The course will also discuss hackers, online subcultures, and other computer-related subcultures, and the integration of computers into various cultural practices. The course will also explore the different uses of digital media. Prerequisite: IS 202 Highly recommended.

IS 310 Computing in the Humanities credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/310/)
Explores use and application of technology to scholarly activity in the humanities, including projects that put classic texts on the web or create multimedia application on humanities topics. Same as INFO 310. Prerequisite: Sophomore standing.

IS 311 History and Foundations of the Information Society credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/311/)
Today's information society bespeaks a long history, exhibiting marked continuities with the past as well as some sharply defined new features. Yet the historical foundations of the information society remain poorly understood. This course develops such a framework, by examining emergent information institutions and practices from early modern Europe to the later 20th century. It examines the historical development of the information society through a number of important conceptual lenses, including: modernity and post-modernity; Fordist and post-Fordist capitalism; social class and information poverty; social and technological determinism; utopianism and dystopianism; and empire and globalization. Prerequisite: IS 202 Highly recommended.

IS 312 Reading and Writing Data credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/312/)
Explores how we tell stories and make arguments in the age of the internet and "big data." We will explore both creative and scholarly works that experiment with the forms of expression that digital and online media make possible, and others that question the cultural, political, and social consequences of computational media and data. Students will develop skills for writing _about data_ and writing _with data_ through a variety of media.
This course satisfies the General Education Criteria for:
Advanced Composition
Humanities - Lit Arts

IS 316 The Design of Usable Information Interfaces credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/316/)
Examines issues of Human Computer Interaction and the design of better computer interfaces. Prerequisite: Sophomore standing.

IS 324 Social Network Analysis credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/324/)
Introduces theories of social networks (how they form, and how they influence thoughts, feelings, and behaviors), while also providing hands-on experience with some powerful tools and methods for analyzing networks on various scales, ranging from small groups, to communities, to populations. It will also explore the use of network analysis to reveal patterns in large-scale data from the humanities such as periods of literary narrative, or character development across vast narratives with multiple interweaving plot lines. Same as SOC 324.

IS 327 Concepts of Machine Learning credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/327/)
A dramatic increase in computing power has enabled new areas of data science to develop in statistical modeling and artificial intelligence, often called Machine Learning. Machine learning covers predictive and descriptive learning, and bridges theoretical and empirical ideas across disciplines. We will focus on concepts and methods for predictive learning: estimating models from data to predict unknown outcomes. Model types will include decision trees, linear models, nearest neighbor methods, and others as time permits. We will cover classification and regression using these models, as well as methods needed to handle large datasets. Lastly, we will discuss deep neural networks and other methods at the forefront of machine learning. We situate the course components in the "data science life cycle" as part of the larger set of practices in the discovery and communication of scientific findings. The course will include lectures, readings, homework assignments, exams, and a class project. Most of the course activities will use Python with the Pandas library, which students should already be proficient using. Students will learn how to use the scikit-learn Python library for machine learning during this course. Prerequisite: Students should be familiar with the concepts of tabular data (tables) and data types (categorical, ordinal, continuous, etc.) and be able to implement these concepts in Python using Pandas. Either STAT/CS/IS 107, IS 205, INFO 407, or at least 1 semester of programming experience using Python and Pandas is recommended as a prerequisite. Students should also be comfortable with basic geometry concepts such as points, lines, and distances. Restricted to Sophomore, Junior, or Senior standing.

IS 334 Usable Privacy and Security credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/334/)
From passwords to email encryption to privacy settings on social media services, it is widely recognized that human factors, usability or user experience play a crucial role in effective privacy and security solutions. Designers of privacy and security solutions need to understand how people might use, interact or appropriate the mechanisms they develop. This course introduces various aspects of user experience (e.g., usability problems, user interface designs, conflicting needs) related to privacy and security systems. It is also designed to provide students with knowledge and opportunities to analyze and evaluate user experience of privacy and security systems. This course is suitable for students who are interested in privacy and security, or user experience, or both!.

IS 340 Project Management credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/340/)
Focuses on project management methodology that will allow you to initiate and manage projects efficiently and effectively. You will learn key project management skills and strategies, and you will have the opportunity to apply this knowledge through assignments.

IS 357 Introduction to Data Storytelling credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/357/)
Storytelling thinking, introducing students to the philosophical, social, and relational dynamics of "story" in information organizations of all sizes. Students are exposed to a range of opportunities to apply storytelling thinking as a tool to identify the audience, design means to communicate with them, and develop dynamic triangle of people sharing stories, engaging in constructive dialogs and reinterpreting etc.

IS 364 Privacy and Information Technology credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/364/)
Designed to be an introduction to data privacy to a wide audience who wants to learn how data privacy has evolved as a compelling concern to public and private organizations as well as individuals. It will provide an overview of privacy theories and the challenges that information technology innovations pose to privacy. Course content will focus on enhancing information professionals' knowledge of privacy threats and protections in the digital age.

IS 368 Youth Community Engagement credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/368/)
This course examines youth services by surveying how youth serving organizations meet young people's developmental, informational, social, personal, and cultural needs through programs and services. The course will provide both practical experience and theoretical knowledge for understanding the value and impact of youth services programs; strategies, techniques, and resources for developing these programs; approaches for ensuring programs are relevant to service communities; and methods for assessment and evaluation of program success.

IS 370 Concepts of Information Behavior Theory credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/370/)
This course will introduce students to the relationships between users and the information they encounter. Students will become familiar with the concepts of understanding the information needs and information behavior of users, as well as the methods of accessing and assimilating information employed by users. The course will also introduce a range of the major models and theories employed in exploring information needs and behavior. Prerequisite: IS 204, or equivalent course.

IS 378 Information Technology Services for Youth credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/378/)
This course examines the intersections between youth, information, and technology from a socio-technical perspective. This course will provide both practical experience and theoretical knowledge for understanding the ways youth engage with information via technology, as well as various developmental, social, personal, and cultural contexts that inform those interactions. Students will evaluate examples of youth information and communication technology use and analyze factors including identities, educational and social structures, opportunities and risks, learning and literacy, and potential futures in these areas. Prerequisite: IS 358 Highly recommended.

IS 380 Consulting for Information Professionals credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/380/)
Designed to provide fundamental knowledge and innovative approaches to consulting practices. Information professionals are increasingly being challenged to provide actionable insights and recommendations based that are critical for strategic decision making. Using methodologies widely adopted by professional firms and researchers, this course covers the basics of data-driven consulting including framing research problems, developing deliverables, and presenting professionally.

IS 381 Introduction to Literacies for Youth credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/381/)
An overview of youth literacies covering: popular literacy myths, censorship, cognitive processes behind reading, visual and digital literacies, contemporary youth practices, government policies, and literacy education in schools. Course readings include fictional works and scholarship from the fields of education, library science, history, media studies, critical race studies, and literary and cultural studies. Students learn the history of marginalized youth in America in order to understand how literacies are defined, promoted, or stigmatized today.

IS 389 Independent Study credit: 0 to 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/389/)
Advanced individual study in a subject related to Information Sciences not covered in normal course offerings. Approved for Letter and S/U grading. May be repeated in separate terms to a maximum of 6 hours. Prerequisite: Consent of instructor. "Request to Enroll in IS Independent Study". Restricted to students with Junior level standing or above.

IS 390 Special Topics in Information Studies credit: 1 to 3 Hours. (https://courses.illinois.edu/schedule/terms/IS/390/)
Directed and supervised investigation of selected topics in information studies that may include among others computers and culture; information policy; community information systems; production, retrieval and evaluation of scientific or social science knowledge; computer-mediated communication; and computer-supported cooperative work. May be repeated. Prerequisite: Sophomore standing.

IS 400 Colloquium credit: 0 or 1 Hours. (https://courses.illinois.edu/schedule/terms/IS/400/)
Venue for presentation and discussion of research and professional activities by faculty, students, staff, and guest speakers. 0 or 1 undergraduate hours. 0 or 1 graduate hours. Approved for Letter and S/U grading. May be repeated in separate semesters.

IS 401 Introduction to Network Information Systems credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/401/)
This course provides a deep hands-on sociotechnical dive into technology including electronics, software, and networks culminating in a holistic understanding of networked information systems. The course also explores the methodological landscape of networked information systems including theoretical assumptions, research methods, and research techniques. Throughout, students will be introduced to, and make active use of, skillsets, frameworks, and standards employed by a wide range of information professionals in selecting, co-designing, appropriating, and innovating-in-use networked information systems. Additional fees may apply. See Class Schedule. 4 undergraduate hours. 4 graduate hours.

IS 403 Children's Materials credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/403/)
Evaluation, selection and use of books and other resources for children (ages 0-14) in public libraries and school media centers; explores standard selection criteria for print and nonprint materials in all formats and develops the ability to evaluate and promote materials according to their various uses (personal and curricular) and according to children's various needs (intellectual, emotional, social and physical). 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: For undergraduates, junior or senior standing and consent of instructor.

IS 406 Cognition in the Wild credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/406/)
Designed as a foundation for students who are interested in learning how to design human-centered information technologies. Students will learn basic principles in human cognition and behavior, and how these principles influence how we interact with information technologies. The course will prepare students to translate theories in human cognition and behavior to analyze, evaluate and rethink everyday design examples. 3 undergraduate hours. 4 graduate hours.

IS 407 Introduction to Data Science credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/407/)
This course introduces students to data science approaches that have emerged from recent advances in programming and computing technology. They will learn to collect and use data from a variety of sources, including the web, in a modern statistical inference and visualization paradigm. The course will be based in the programming language R, but will also use HTML, regular expressions, basic unix tools, XML, and SQL. Supervised and unsupervised statistical learning techniques made possible by recent advances in computing power will also be covered. 4 undergraduate hours. 4 graduate hours.

IS 409 Web Technologies & Techniques credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/409/)
This course provides an introduction to the technologies behind the Web. Topics covered include: hypertext, hypermedia, the history of the Web, the role of Web standards and their impact on the development of Web resources. The course introduces principles of Web design and usability. Students will gain an understanding how the Web works and how to design, construct, evaluate, and maintain Web-based materials. 3 undergraduate hours. 4 graduate hours. Priority is given to students pursuing a transfer into the BS/IS degree (http://go.ischool.illinois.edu/BSIS).

IS 410 Storytelling credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/410/)
Fundamental principles of the art of storytelling including techniques of adaptation and presentation; content and sources of materials; methods of learning; practice in storytelling; planning the story hour for school and public libraries and other public information settings; and audio, video, and digital media. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: For undergraduates, junior or senior standing and consent of instructor.

IS 411 Information Systems Analysis credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/411/)
This is an introductory course to Information Systems Analysis. Information Systems Analysts are typically involved in an entire information systems development life cycle from initial planning to final assessment. Several different approaches have been used. Students will gain experience in several aspects of Information Systems Analysis, including business process modeling, requirements gathering, data flow diagramming, and database design. This is a hands-on course with in-class exercises and group practical assignments. 3 undergraduate hours. 4 graduate hours.

IS 413 Teen Materials credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/413/)
Evaluation, selection and use of books and other resources for young adults (ages 12-18) in public libraries and school media centers; explores standard selection criteria for print and nonprint materials in all formats and develops the ability to evaluate and promote materials according to their various uses (personal and curricular) and according to young adults' various needs (intellectual, emotional, social and physical). 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: For undergraduates, junior or senior standing and consent of instructor.

IS 416 Adaptive Minds and Computers credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/416/)
Given the rapid changes in information environments, emerging research has shown how human adapts to the complex information environments through different self-regulated processes. This course will discuss the evolving theories of human performance in the contemporary information environments, including how people select, search, make sense and make decisions among a huge amount of information; how information environments shape individual and collective human performance; and how people adapt to information environments for forming coupling cognitive systems. 3 undergraduate hours. 4 graduate hours. Prerequisite: IS 406.

IS 417 Data Science in the Humanities credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/417/)
Human culture provides an ideal testbed for students exploring data science, because the interpretive challenges that lurk beneath the surface in other domains become starkly visible here. For instance, cultural materials usually come to analysts as unstructured texts, images, or sound files, forcing explicit decisions about data modeling and feature extraction. Cultural questions also highlight the importance of interpreting statistical models in relation to a social context. Last but not least: songs, poems, and stories confront us with vivid problems that are inherently fun to explore. This course will start by reviewing descriptive and inferential statistics, and build up to applications of supervised and unsupervised machine learning. We will apply those methods to a range of cultural materials using them to model the pace of stylistic change in popular music, for instance, and the representation of gender in fiction. 3 undergraduate hours. 4 graduate hours. Prerequisite: One semester of experience programming, for example, STAT 107 or IS 430 - or any analogous course.

IS 418 Community Engagement credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/418/)
Community engagement refers to the multiple ways that information professionals in libraries and other settings learn about, collaborate with, and provide service and outreach to community members. Provides an introduction to, and overview of, community engagement theory and practice. A significant portion of coursework will take the form of service learning or community-based research via approved projects that match students' interests. 3 undergraduate hours. 4 graduate hours.

IS 419 Entrepreneurial Information Technology Design credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/419/)
Introduces students to a range of rapid prototyping techniques and methods to analyze needs, opportunities and design spaces. Students will work in teams to develop ideas for novel computational devices or applications to meet identified needs. Covers the interlinked entrepreneurial skills of identifying an unmet need, exploiting technological opportunities, exploring a design space to refine an idea, and communicating a design vision through demonstrations with prototypes and proofs of concept. This enables developers to show how their envisaged working interactive technology will be used productively in a particular real-life context. Communicating the vision of computational devices is a challenge because dynamic use in context is hard for people other than the device's developers to imagine. The ability to produce convincing, clear, powerful demonstrations even at the early stages of a project is a highly valuable entrepreneurial skill, and also highly applicable within an organization. Directed and supervised investigation of selected topics in information studies that may include among others the social, political, and historical contexts of information creation and dissemination; computers and culture; information policy; community information systems; production, retrieval and evaluation of knowledge; computer-mediated communication. 3 undergraduate hours. 4 graduate hours. Prerequisite: Undergraduate students: Priority is given to students pursuing a transfer into the BS/IS degree (http://go.ischool.illinois.edu/BSIS).

IS 420 Community Informatics credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/420/)
Surveys an emerging field that studies how local, historical communities are using information and communications technologies. Key principles and hands-on experience equip students for contributing to the non-profit/public sector as people harness new technologies and media—be they individuals, students, families, community organizations, or other. Prepares future professionals and researchers to understand and master this environment, whatever their technology background. Especially useful for those interested in public or community libraries, youth services, social work, education, and anyone interested in working with or studying underserved communities. 3 undergraduate hours. 4 graduate hours.

IS 423 Early Literacy credit: 2 Hours. (https://courses.illinois.edu/schedule/terms/IS/423/)
Librarians fill a key role in the literacy development of young children with opportunities for interaction both in the library and through outreach programs. Key skills center on developing literacy-rich library environments, classroom instructional support, intentional embedding of essentials skills and practices within daily activities and lessons, resources about early literacy strategies to share with families and caregivers. Practitioners will understand the importance of integration of technology to meet the diverse developmental, cultural, social and linguistic needs of children to ensure they are able to create meaning from text. 2 undergraduate hours. 2 graduate hours.

IS 424 Social Computing credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/424/)
This interdisciplinary course introduces students to fundamental theories, methods, technologies and applications of social computing. Students learn about this emerging discipline from two perspectives: First, basic principles of collective information production and processing, and methods for studying these principles. Topics include prediction markets, games with a purpose, open source software development, social media, social networks, information visualization, and online games. Second, socio-technical aspects of the design and usage of respective technologies. This includes participation, privacy and security. Students learn how to solve problems in social computing in a systematic and rigorous fashion. At the end of the course, students will be able to design, manage and execute social computing projects for scholarly and commercial use, and to critically assess work in this area. 3 undergraduate hours. 4 graduate hours.

IS 426 Museum Informatics credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/426/)
The course examines various ways that information technologies are and might be used in museums and other cultural heritage settings. Museum websites, visitor apps, interactive exhibits, and uses of digitized and federated collections are explored. Students gain an introduction to Design Thinking by working on a final project that involves the development of a novel computational resource. Students are encouraged to approach class topics from their individual backgrounds in the humanities, sciences, or social sciences. 4 undergraduate hours. 4 graduate hours. Prerequisite: Junior or senior standing and consent of instructor for undergraduates; consent of instructor for non-iSchool graduate students for on-campus sections.

IS 427 Mathematical Foundations for Data Analytics credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/427/)
An introduction to topics and techniques in transformational geometry, linear algebra, and calculus most relevant for the study of multivariate analysis, and demonstrates their roles as bases for solving data analytic problems in the information sciences. 3 undergraduate hours. 4 graduate hours. Prerequisite: Recommended IS 203; or IS 205; or IS 206; or equivalent course.

IS 429 Web Content Strategy and Management credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/429/)
Focuses on the basics of web site design, content development, constructing web pages with standard HTML and CSS. We will also cover usability and accessibility, content management system options, multi-media and interactivity in the context of standard HTML and CSS, procedures and policies for organizations, with a concentration on public, academic and special libraries. Students will investigate, design, and draft a representative site. Students may work with non-profit and library clients in constructing and redesigning their web sites or design and construct their own personal professional pages. In this course we will learn how to design and deploy flexible websites that serve dynamically changing content, focusing in particular on the needs of public-service organizations such as libraries, associations, and other not-for-profit entities. 4 undergraduate hours. 4 graduate hours. Prerequisite: Laptop Required.

IS 430 Foundations of Information Processing credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/430/)
Covers common data, document processing, and programming constructs and concepts. Focuses on problem solving and abstraction with a programming language. By the end of the course students will be able to design, develop and test a moderately complex computer program to manage full text, bibliographic records or multimedia. The course prepares students for working with applications in data analytics, data science, digital libraries, text mining and knowledge management. No prior programming background is assumed. 4 undergraduate hours. 2 or 4 graduate hours.

IS 436 Playful Design Methods credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/436/)
In this immersive and experiential course, students consider "playfulness" as a key aspect of design methodologies and practices. Looking closely at the philosophical, social, and relational dynamics of play, we will explore how playful approaches to design thinking, game design, and other gameful methodologies can encourage collaboration, engagement, and emergent, transformative solutions to a range of challenges that face us in our rapidly-changing, information-based culture. The course aims to build student competency in design methods through a sequence of game design experiences arising from a broad consideration of play. 3 undergraduate hours. 4 graduate hours.

IS 439 Web Development Using Application Framework credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/439/)
A course in the use and evaluation of Web application frameworks for system architects, designers, and developers. Experience in creating static Web sites using HTML and CSS. 3 undergraduate hours. 4 graduate hours. Prerequisite: Experience in Python programming (IS 430 or equivalent). Experience in creating static Web sites using HTML and CSS. Experience in creating dynamic Web sites using tools like PHP is helpful but not required. Experience in using relational databases is helpful but not required.

IS 440 Community Informatics Studio credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/440/)
Studio-based learning methods, which are common in art and architectural education, are used to help students address a real-world problem or 'case'. Working in teams and mentored by the instructor and experts, students will learn how to 'be a professional' in an environment in which process is as important as project. During the term, students will participate in a cyclical process of design creation, presentation and critique culminating in a final presentation during the final day(s) of class of the finished proposal/design of how to address the case. Assumes experience in community engagement within a social justice framework. 3 undergraduate hours. 4 graduate hours.

IS 441 Strategic Communication credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/441/)
This course introduces students to collaborative approaches to strategic communication designed to persuade, influence and cause action through free and informed choices. There are many methods and tools at the disposal of the strategic communicator. This course will focus on the ethics, forms, techniques and practices of data storytelling as the centerpiece of strategic communications that are appropriate and effective for the information professional. Students learn to coordinate multiple aspects of human-centered information solutions such as information visualizations. Serving diverse information needs and ensuring those needs are met, future information professionals are expected to understand, support, and innovate dynamism of the relationships between people, information and technology. 3 undergraduate hours. 4 graduate hours.

IS 444 Legal Aspects of Information Systems credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/444/)
This course is intended to introduce students to principles, fundamental ideas, and cases in the Legal Aspects of Information Systems, with an emphasis on Intellectual Property Law and using scholarship as an exemplar information system, which is considered broadly. This course will be conducted in a seminar format and survey the literature and case law including copyright and open licensing, patents, and trademark law. We will discuss recent policy changes and their impact on the Intellectual Property rights. Where appropriate we will compare American jurisprudence to international Intellectual Property Law. 3 undergraduate hours. 4 graduate hours.

IS 445 Data Visualization credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/445/)
Data visualization is crucial to conveying information drawn from models, observations or investigations. This course will provide an overview of historical and modern techniques for visualizing data, drawing on quantitative, statistical, and network-focused datasets. Topics will include construction of communicative visualizations, the modern software ecosystem of visualization, and techniques for aggregation and interpretation of data through visualization. Particular attention will be paid to the Python ecosystem and multi-dimensional quantitative datasets. 3 undergraduate hours. 4 graduate hours.

IS 446 Systems Analysis and Design credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/446/)
Covers how to evaluate, select and manage information systems that will be used in the daily operation of libraries and information centers. Includes the systems used by technical staff and the information consumers. Course will focus on information as a product. Attention is given to the operation of an organization as a whole and the impact of change on the integration of resources, work flow and usability. Formal methods for modeling systems, and industry practice techniques of analysis are used to address these problems and opportunities. 3 undergraduate hours. 4 graduate hours.

IS 449 Web Application Development credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/449/)
This course focuses on concepts and skills needed to build full stack web applications. Topics include Model-View-Controller architecture, database access, business logic implementation, advanced client-side scripting, authentication, and application security. Students will use popular client-side and server-side web application frameworks, such as React.js and Django, to study how these concepts are implemented in practice and to apply design/development principles to build realistic web applications. 3 undergraduate hours. 4 graduate hours. Prerequisite: IS 205, IS 206, and IS 229.

IS 451 Bibliography of Africa credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/451/)
We will focus on the identification and evaluation of African studies reference sources and library techniques as a foundation for in-depth research. Sources covered will be in all formats, including print, microform and electronic resources. 3 undergraduate hours. 4 graduate hours.

IS 453 Information Books and Resources for Youth credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/453/)
Evaluation, selection and use of information books and other resources for young people (ages 0-18) in public libraries and school media centers; explores standard selection criteria for factual print and nonprint materials in all formats and develops the ability to evaluate and promote nonfiction books and resources according to their various uses (personal and curricular) and according to young people's various needs (intellectual, emotional, social and physical). 3 undergraduate hours. 2 or 4 graduate hours.

IS 455 Database Design and Prototyping credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/455/)
The course provides students with both theoretical and practical training in good database design. By the end of the course students will create a conceptual data model using entity-relationship diagrams, understand the importance of referential integrity and how to enforce data integrity constraints when creating a database. Students will be proficient in writing basic queries in the structured query language (SQL) and have a general understanding of relational database theory including normalization. 4 undergraduate hours. 4 graduate hours. Prerequisite: Junior Standing required.

IS 456 Information Storage and Retrieval credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/456/)
Introduces problems of document representation, information need specification, and query processing. Describes the theories, models, and current research aimed at solving those problems. Primary focus is on bibliographic, text, and multimedia records. 3 undergraduate hours. 4 graduate hours.

IS 457 Data Storytelling credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/457/)
An introduction to understanding data as a source for storytelling and to telling stories based on data. This process will include understanding and analyzing data sets to find informative aspects, changes, or contrasts that will provide the basic information for developing stories. Course participants will learn storytelling concepts, narrative theories, and performance techniques and develop stories in a collaborative workshop style. Students will work with data visualization toolkits, which will involve variable levels of coding and skill. By using storytelling techniques with data, students can develop, and tell well-evidenced stories, organizations can make better data-driven decisions. 3 undergraduate hours. 4 graduate hours.

IS 459 Mobile Applications credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/459/)
This course introduces students to the fundamental concepts, cutting edge technologies and state-of-the-art research in Human Computer Interaction areas of mobile computing and ubiquitous computing. The course presents major mobile application domains systems design challenges, and design opportunities. Students' understanding will be reinforced through practical work in mobile system design, e.g., applying a video prototyping tool to design and evaluate a mobile system. 3 undergraduate hours. 4 graduate hours.

IS 461 Russian, East European, and Eurasian Bibliography & Research Methods credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/461/)
With a focus on Russia, Eastern Europe, and Eurasia, students will investigate this fascinating part of the world, how it has been studied and represented by generations of scholars, scientists, writers, artists, government officials, and others, and how the many fruits of their labors are (or are not) accessible to us today. 3 undergraduate hours. 4 graduate hours.

IS 464 Information Assurance credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/464/)
The course provides an introduction to the concepts, technologies, practices and challenges of Information Assurance. It takes a broad view of Information Security and Privacy and covers the essential principles for the protection of information systems; the relevant technologies; organizational concerns; policies, human aspects; legal approaches; criminology; and ethical issues. Students will gain an appreciation for the difficulty of designing, developing, deploying and maintaining information systems, services and software products that are secure and comply with expectations of security and privacy. 3 undergraduate hours. 4 graduate hours.

IS 466 Accessible and Inclusive Technologies credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/466/)
This course introduces students to various technology challenges and needs of under-served populations (e.g., people with disabilities). We will examine various accessible and inclusive technologies to understand how they were built to serve specific under-served user groups but can also benefit a wider range of users. This course will also cover various design frameworks, guidelines and processes to create more inclusive designs and technologies. 3 undergraduate hours. 4 graduate hours.

IS 467 Ethics and Policy for Data Science credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/467/)
The course will address common ethical challenges related to data including privacy, bias, and data access. These challenges will be explored through real-world cases of corporate settings, non-profits, governments, academic research, and healthcare. The course emphasizes the complexity of ethical decision-making and that trade-offs between priorities are often necessary. The course also considers how the burdens of addressing ethical concerns should be distributed among stakeholders. Students will be introduced to a range of relevant policy responses at the organizational, institutional, governmental,and supranational levels. 3 undergraduate hours. 4 graduate hours.

IS 471 Instructional Strategies and Techniques for Information Professionals credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/471/)
Provides an introduction to learning theories and instructional methods used in a variety of information settings, including libraries, archives, museums, online, and educational environments. Includes an overview of theoretical and applied research and discusses relevant issues and concepts. Students will have an opportunity to design and present an instructional program. 3 undergraduate hours. 2 or 4 graduate hours.

IS 477 Data Management, Curation & Reproducibility credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/477/)
Addresses issues in Data Management, Curation & Reproducibility from a Data Science perspective. We discuss definitions of data science, and then introduce and use the Data Science Life Cycle as an intellectual foundation. Topics include Research Artifact Identification and Management, Metadata, Repositories, Economics of Artifact Preservation and Sustainability, and Data Management Plans. We use the case study to ground our discussions in both data sets and in specific data science research. This course requires a final project that applies course knowledge to a data science experiment and creates a data management plan for that experiment. 3 undergraduate hours. 4 graduate hours. Prerequisite: IS 205 or STAT 207 or equivalent programming experience.

IS 490 Topics in Info Foundations credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/490/)
Directed and supervised investigation of selected topics in information studies that may include among others the social, political, and historical contexts of information creation and dissemination; computers and culture; information policy; community information systems; production, retrieval and evaluation of knowledge; computer-mediated communication. Additional fees may apply. See Class Schedule. 2 to 4 undergraduate hours. 2 to 4 graduate hours. Approved for Letter and S/U grading. May be repeated. Prerequisite: For undergraduates, junior standing and IS 202, or consent of instructor.

IS 491 Topics in Information Services credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/491/)
Variety of newly developed and current topics courses within the field of information services, intended to augment the existing Information Sciences curricula. 3 undergraduate hours. 2 to 4 graduate hours. May be repeated if topics vary.

IS 492 Topics in Information Organizations & Social Contexts credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/492/)
Variety of newly developed and current topics courses within the field of information organizations and social contexts, intended to augment the existing Information Sciences curricula. 3 undergraduate hours. 2 to 4 graduate hours. May be repeated if topics vary.

IS 493 Topics in Cultural Heritage, Collection Management & Preservation credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/493/)
Variety of newly developed and current topics courses within the field of information cultural heritage, collection management and preservation, intended to augment the existing Information Sciences curricula. 3 undergraduate hours. 2 to 4 graduate hours. May be repeated if topics vary.

IS 494 Topics in Management, Ethics & Policy credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/494/)
Variety of newly developed and current topics courses within the field of management ethics and policy, intended to augment the existing Information Sciences curricula. 3 undergraduate hours. 2 to 4 graduate hours. May be repeated if topics vary.

IS 495 Topics in Organization & Representation credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/495/)
Variety of newly developed and current topics courses within the field of information organizations and representation, intended to augment the existing Information Sciences curricula. 3 undergraduate hours. 2 to 4 graduate hours. May be repeated if topics vary.

IS 496 Topics in Human-Centered Design & Systems credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/496/)
Variety of newly developed and current topics courses within the field of human-centered design and systems, intended to augment the existing Information Sciences curricula. 3 undergraduate hours. 2 to 4 graduate hours. May be repeated if topics vary.

IS 497 Topics in Data Analytics & Data Science credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/497/)
Variety of newly developed and topics courses within Data Analytics & Data Science, intended to augment the existing Information Sciences curricula. Additional fees may apply. See Class Schedule. 2 to 4 undergraduate hours. 2 to 4 graduate hours. May be repeated if topics vary.

IS 499 Topics in Web Design & Development credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/499/)
Variety of newly developed and current topics courses within Web Design & Development, intended to augment the existing Information Sciences curricula. 3 undergraduate hours. 2 to 4 graduate hours. May be repeated if topics vary.

IS 500 Introduction to the iSchool credit: 0 to 2 Hours. (https://courses.illinois.edu/schedule/terms/IS/500/)
Introduces graduate students to the School of Information Sciences (the iSchool). Students will learn best practices for success in their program. They will also learn about resources and support provided by the School and the University while building community among their peers, faculty, staff and alumni. Various sections address different graduate student audiences and needs. Approved for Letter and S/U grading.

IS 501 Reference and Information Services credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/501/)
Explores reference and information services in a variety of settings, introduces widely used print and online sources, and develops question negotiation skills and search strategies.

IS 503 History of Children's Lit credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/503/)
Interpretation of children's literature from the earliest times, including the impact of changing social and cultural patterns on books for children; attention to early printers and publishers of children's books and to magazines for children.

IS 504 Sociotechnical Information Systems credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/504/)
The character, success, and costs/benefits of information technologies are socio-technical matters. Because of this, best practice for IT design and integration relies on participants' ability to understand and create for the totality of those settings, including social and technical dimensions. This course provides students with analytic tools for examining socio-technical settings and experience in applying that knowledge in IT modeling, design and management.

IS 505 Information Organization and Access credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/505/)
Emphasizes information organization and access in settings and systems of different kinds. Traces the information transfer process from the generation of knowledge through its storage and use in both print and non-print formats. Consideration will be given to the creation of information systems: the principles and practice of selection and preservation, methods of organizing information for retrieval and display, the operation of organizations that provide information services, and the information service needs of various user communities.

IS 506 Human-Centered Information Systems credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/506/)
This course provides students the fundamental theory and skills necessary to design, develop, and evaluate human centered information systems. By the end of the course students will be able to gather user needs in light of existing sociotechnical systems, design effective human centered interfaces, implement interactive prototypes, and conduct unit testing and user studies of software. The course will employ lectures, mini projects and in-class hands-on activities to reinforce the ideas presented.

IS 507 Data, Statistical Models and Information credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/507/)
An introduction to statistical and probabilistic models as they pertain to quantifying information, assessing information quality, and principled application of information to decision making, with focus on model selection and gauging model quality. The course reviews relevant results from probability theory, parametric and non-parametric predictive models, as well as extensions of these models for unsupervised learning. Applications of statistical and probabilistic models to tasks in information management (e.g. prediction, ranking, and data reduction) are emphasized. Prerequisite: Graduate standing.

IS 508 Seminar in Information Foundations credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/508/)
This seminar course will offer an advanced graduate survey of research in areas related to information foundations, across a wide range of topics. This course is designed to incorporate multiple guest lectures. Weekly class meetings will be composed of both lectures and discussions. May be repeated in the same or separate semesters to a maximum of 16 hours, if topics vary.

IS 509 History and Foundations of Information Science credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/509/)
Provides an introduction to the historical foundations of IS. Examinations of the interactions of socio-cultural, technological and professional factors underlying the emergence of IS provide a basis for exploring more recent developments in theory and practice. Required IS Ph.D. course.

IS 510 Libraries, Information and Society credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/510/)
Explores major issues in the library and information science professions as they involve their communities of users and sponsors. Analyzes specific situations that reflect the professional agenda of these fields, including intellectual freedom, community service, professional ethics, social responsibilities, intellectual property, literacy, historical and international models, the socio-cultural role of libraries and information agencies and professionalism in general, focusing in particular on the interrelationships among these issues. Prerequisite: Required M.S. in library and information science degree core course.

IS 511 Scholarly Communications credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/511/)
A basic level of scholarly communication literacy and sophistication is an increasing requirement of academic librarians, both to inform their work and to make those librarians effective partners in the scholarly enterprise. This course is designed to cultivate and develop that literacy. It will address topics such as: the established modes of scholarly communication and the emergence of alternatives influenced by the growth of social media and other forms of networked communication; the divide between formal and informal modes of scholarly communication and the current state of flux as that divide begins to collapse; the varying economies of scholarship (the reputation and prestige economy, the financial economy both in the market and in the mission-driven research academy, and the economic impact of scholarly communication decisions upon library budgets); modes of credentialing scholarship and their impact upon professional advancement, with special attention to peer review and its (current?) discontents; scholarship as intellectual property and the most effective ways to manage that property and achieve scholarly goals; and issues in access and preservation as they relate to ensuring the future of the scholarly conversation.

IS 514 Applied Business Research credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/514/)
As an experiential learning class, this course covers advanced techniques of business research with an emphasis on managing real-world client projects. Students will be assigned to teams and work with clients to identify research requirements and construct recommendations. Students will acquire critical skills in creating professional deliverables through client engagements. Students will build professional research portfolios at the conclusion of their projects. May be repeated in separate terms up to 8 hours if topics vary. Prerequisite: Instructor approval required.

IS 515 Information Modeling credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/515/)
Information modeling is critical to all information systems and analysis. This course introduces students to foundational frameworks (set theory and logics) and basic underlying objects (entities, attributes, and relations) of information modeling. A variety of modeling approaches (use case modeling, relational database design, first-order predicate logic, and semantic web technologies) are considered, and recent developments (non-relational databases and knowledge graphs) are reviewed. Modeling strategies are assessed by their expressiveness and reasoning capabilities.

IS 516 Scalable Information Systems credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/516/)
Focuses on large-scale information systems and analyzes the design and development principles and infrastructures that make them scalable and reliable. Topics include issues in scalability and availability, distributed system design, virtualization, scalability testing, and popular frameworks and platforms, such as Hadoop/MapReduce, Apache Spark, Amazon Web Services. Real-world, large-scale information systems, such as those developed by Google, Amazon, and Facebook, etc., are discussed and analyzed as use cases.

IS 517 Methods of Data Science credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/517/)
A dramatic increase in computing power has enabled new areas of data science to develop in statistical modeling and analysis. These areas cover predictive and descriptive learning and bridge between ideas and theory in statistics, computer science, and artificial intelligence. We will cover methods including predictive learning: estimating models from data to predict future outcomes. Regression topics include linear regression with recent advances using large numbers of variables, smoothing techniques, additive models, and local regression. Classification topics include linear regression, regularization, logistic regression, discriminant analysis, splines, support vector machines, generalized additive models, naive Bayes, mixture models and nearest neighbor methods as time permits. Lastly we develop neural networks and deep learning techniques, bridging the theory introduced in the earlier parts of the class to purely empirical methods. We situate the course components in the "data science lifecycle" as part of the larger set of practices in the discovery and communication of scientific findings. Prerequisite: IS 507 or equivalent (e.g. intro probability/stats STAT 100, CS 361, or ECON 202); and IS 490 IDS/CS 398 ID/STAT 490 or CS101 or equivalent; or consent of the instructor. Linear Algebra recommended at the level of MATH 125; Calculus recommended at the level of MATH 220.

IS 518 Seminar in Information Services credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/518/)
Offers an advanced graduate survey of research in areas related to information services, across a wide range of topics. Designed to benefit from guest lectures. Composed of both lectures and discussions. May be repeated in the same or separate terms for a maximum of 16 hours if the topics vary.

IS 519 Research Design in Information Science credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/519/)
Provides an introduction to the design of IS research, beginning with an in-depth consideration of the philosophical and logical underpinnings of research. A brief survey of different methods used in IS research is followed by an exploration of research design issues through comparative hands-on exercises. Throughout the course, the emphasis will be on research design choices, especially the connections between research questions and research methods. Required IS Ph.D. course.

IS 521 Digital Libraries credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/521/)
A comprehensive examination of the history and state-of-the-art in digital library research and practice. Focuses upon the theoretical, technological, human factors and evaluative components of digital library research and practice. Course includes an intensive reading of the literature, review of existing technologies and proof-of-concepts implementation projects. Students should have access to a personal computer on which they can experiment on their own with downloaded software tools. Students must be competent in basic computing including the installation and configuration of software packages. Prerequisite: IS 505 (formerly IS 501, SP 20 and before) or consent of instructor; previous or concurrent enrollment in IS 430 (formerly IS 452, SU 20 and before) (either the 2 credit hours or the 4 credit hours of Foundations Info Processing are acceptable), or proof of competency in programming.

IS 522 Library Buildings credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/522/)
Studies the library's physical plant in the light of changing concepts and patterns of library service; analyzes present-day library buildings (both new and remodeled), and their comparison with each other as well as with buildings of the past; examines the interrelationship of staff, collections, users, and physical plant; discussion supplemented by visits to new libraries and conference with their staffs. A two-day field trip is required. Additional fees may apply. See Class Schedule.

IS 523 Preserving Info Resources credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/523/)
Covers the broad range of library preservation and conservation for book and nonbook materials relating these efforts to the total library environment; emphasizes how the preservation of collections affects collection management and development, technical services, access to materials and service to users.

IS 524 Data Governance credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/524/)
The course will address issues of data governance, including data ethics, and design and implementation of policy responses and best practices. Topics include privacy, discrimination, data sharing, data quality, and building a diverse workforce. These topics will be explored through real-world cases in corporate settings, libraries, non-profits, healthcare, governments, and academe. The course will also cover principles and frameworks for analyzing and responding to issues. The course is suitable for anyone planning to work in a professional setting that will involve handling data or building information systems, or seeking a grounding for future study of data and information ethics.

IS 525 Data Warehousing and Business Intelligence credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/525/)
This course examines the construction of a data warehouse and business intelligence system. It will review the roles and requirements of building the system, including data modelling and business intelligence product design. This course will explore real-world case studies of data warehouse and business intelligence projects through hands-on experience with data modelling, Business Objects, Power BI and Tableau. The course culminates with a final project to design a solution for a business case.

IS 526 Building Advanced Interactive Systems credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/526/)
This course will teach students about building inclusive interactive systems. They will learn to gather and understand user requirements and needs for a wide range of user populations, especially those that are under-served (e.g., children, older adults, people with disabilities), apply inclusive design frameworks and principles, and design, develop, evaluate and improve interactive prototypes in an iterative manner.

IS 527 Network Analysis credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/527/)
Network Analysis has become a widely adopted method for studying the interactions between social agents, information and infrastructures. The strong demand for expertise in network analysis has been fueled by the widespread acknowledgement that everything is connected and the popularity of social networking services. This interdisciplinary course introduces students to fundamental theories, concepts, methods and applications of network analysis in a practical manner. Students learn and practice hands-on skills in collecting, analyzing and visualizing network data.

IS 528 Seminar in Information Organizations & Social Contexts credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/528/)
This seminar course will offer an advanced graduate survey of research in areas related to information in Information Organizations & Social Contexts, across a wide range of topics. This course is designed to incorporate multiple guest lectures. Weekly class meetings will be composed of both lectures and discussions. May be repeated in the same or separate terms for a maximum of 16 hours if the topics vary.

IS 529 Doctoral ProSeminar credit: 1 Hour. (https://courses.illinois.edu/schedule/terms/IS/529/)
A core course for all first year Information Science PhD students. The seminar serves as a venue for the development of a variety of skills and capacities to succeed as a scholar. Throughout the term, students will engage in a series of tasks designed as an initiation to the academic profession. The seminar offers a mix of sessions on progression through the Ph.D. degree program, the research process, guidance on the academic profession, and written and oral presentation of scholarly research. While students will receive feedback from the instructor, this is a seminar, meaning that active student participation and peer feedback is crucial. Approved for S/U grading only. May be repeated in separate semesters to a maximum of 4 hours. Prerequisite: PhD Students in Information Sciences.

IS 530 Collection Development credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/530/)
Examines issues affecting the development and management of collections for academic, public, special, and school libraries: collection development policies, collection assessment, the marketplace, publishing, legal issues, and budget allocation; document delivery; collaboration and cooperation. Prerequisite: IS 505 - Information, Organization and Access (formerly IS 501 prior to FA 20), or concurrent enrollment in IS 505 and IS 530.

IS 532 School Library Management credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/532/)
School Library Information Specialists serve children and young adults (ages 5-18) in K-12 school library media centers. Students will acquire specific knowledge, skills and competencies needed to design, develop, integrate and assess curriculum and instruction with an emphasis on the information needs of K-12 students. Readings and projects provide students with opportunities to apply the practical knowledge and skills they have learned about building reading literacy, teaching information literacy skills, collaborating with teachers and integrating resources into teaching and learning.

IS 533 Oral History Methods credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/533/)
This methods seminar engages with the theory and practice of oral history through reading, discussion, and practice. Students will: gain hands-on experience with interviewing and transcription, be prepared to work with Institutional Review Boards, understand how to design consent and legal release forms, and will engage with relevant ethical and theoretical issues.

IS 534 Information Consulting credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/534/)
This course is designed to provide fundamental knowledge in providing research services and also introduce the latest trends and innovative approaches in research services. Information professionals are increasingly being challenged to provide not just data but insights and recommendations that are critical for strategic decision making. Using methodologies widely adopted by professional firms and researchers, this course will cover basics of research consulting including framing research problems, developing deliverables, and presenting professionally.

IS 537 Theory & Practice of Data Cleaning credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/537/)
Data cleaning (also: cleansing) is the process of assessing and improving data quality for later analysis and use, and is a crucial part of data curation and analysis. This course identifies data quality issues throughout the data lifecycle, and reviews specific techniques and approaches for checking and improving data quality. Techniques are drawn primarily from the database community, using schema-level and instance-level information, and from different scientific communities, which are developing practical tools for data pre-processing and cleaning. Same as CS 513.

IS 538 Seminar in Cultural Heritage, Collection Management, & Preservation credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/538/)
Offers an advanced graduate survey of research in areas related to research in Cultural Heritage, Collection Management, & Preservation, across a wide range of topics. Designed to incorporate multiple guest lectures. Weekly class meetings will be composed of both lectures and discussions. May be repeated in the same or separate terms for a maximum of 16 hours if the topics vary.

IS 540 Social Justice in the Information Professions credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/540/)
Intended to provide a historic and contemporary overview of social justice and advocacy work in librarianship. The course will be primarily focused on activities in the United States, though international movements and perspectives will be addressed. Topics include: desegregation of libraries and professional associations; recruitment and retention of library workers from traditionally underrepresented populations; library outreach; intellectual freedom; and emerging critical theories and issues in the field. Prerequisite: Graduate student.

IS 541 Copyright for Information Professions credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/541/)
Copyright is a complicated legal concept that affects all information institutions, including corporations, libraries, archives, and museums whether they are online or off. This course will explore copyright from both a legal and information management perspective to demystify the concept and provide practical tools for working with copyrighted material. Topics discussed include the Constitutional underpinnings of copyright, copyright basics, copyright exceptions, fair use, the open access movement, licensing, data and copyright, and educational issues relating to copyright including issues related to K-12 teaching. This course is designed for students with a variety of backgrounds and interests.

IS 542 Research and Inquiry for Youth credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/542/)
This course is designed to prepare school librarians to serve as instructional leaders in their learning communities, positioned to transform teaching and learning in order to ensure students are college, career, and community ready. Participants will develop strategies and practices to support the school's curriculum through the roles of instructional partner, information specialist, and teacher. The school librarian has a leadership role in designing authentic learning activities in research and guided inquiry to prepare students in both the process and attitudes necessary to identify and meet their own lifelong information needs.

IS 543 Digital Preservation credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/543/)
Examines current problems with and approaches to digital preservation that are fundamental to the long-term accessibility of digital materials. Examines the range of current research problems, along with emerging methods and tools, and assesses a variety of organizational scenarios to plan and implement a preservation plan. Topics include basic information theory, preservation of complex digital objects; standards and specifications; sustainability and risk assessment; authenticity, integrity, quality control, and certification; and management of preservation activities.

IS 544 Administration & Management of Libraries and Information Centers credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/544/)
Designed to explore the principles that govern how organizations and institutions work, this course provides a foundation for and introduction to the theories, practices and procedures involved in the management and administration of libraries and information centers.

IS 545 Advanced Data Visualization credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/545/)
This seminar-style course will cover advanced topics in visualization techniques. This will cover topics such as the history of visualization techniques, the perception and understanding of visual information, and new frontiers in displaying quantitative information. We will explore the modern technical stack for creating and sharing visualizations, including topics in javascript, python, and reactive frameworks.

IS 547 Foundations of Data Curation credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/547/)
Data curation is the active and on-going management of data through its lifecycle of interest and usefulness to scholarship, science, and education; curation activities and policies enable data discovery and retrieval, maintain data quality and add value, and provide for re-use over time. This course provides an overview of a broad range of theoretical and practical problems in the emerging field, examining issues related to appraisal and selection, long-lived data collections, research lifecycles, workflows, metadata, and legal and intellectual property issues.

IS 548 Seminar in Management, Ethics, & Policy credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/548/)
Offers an advanced graduate survey of research in areas related to research in management, ethics, & policy, across a wide range of topics. Designed to incorporate multiple guest lectures. Weekly class meetings will be composed of both lectures and discussions. May be repeated in the same or separate terms for a maximum of 16 hours if the topics vary.

IS 549 Practicum credit: 2 Hours. (https://courses.illinois.edu/schedule/terms/IS/549/)
Supervised field experience of professional-level duties in an approved library or information center. Approved for S/U grading only. A maximum of 2 hours may be applied toward a degree program. Prerequisite: Completion of 12 graduate hours of information sciences courses; submission of Practicum forms.

IS 550 Theories of Information credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/550/)
A theory of information attempts to articulate clearly and precisely what information is, and what it means to become informed. Theories of information can contribute to the scientific foundations for many important research and practice activities in IS, including data curation, information modeling, information access, digital preservation, and informatics support for science and scholarship. This course, Theories of Information -- A, takes a logic-based approach to investigating the nature of information. Methodologically we draw from a family of methods that might be called formal methods, in contrast to the empirical methods of social and nature science. Formal methods typically make use of concepts from logic, set theory, and discrete mathematics to construct and explore formal systems. Formal methods are widely used in linguistics, mathematics, philosophy, and computer science. Within the general area of formal methods our approach in this course might be more specifically referred to as conceptual analysis, as it takes the form of a systematic analysis of a concept, namely information. Most of the prior work that is relevant to our analysis is from analytic philosophy, linguistics (especially formal semantics), and computer science (especially knowledge representation and AI). Prerequisite: Some familiarity with formal logic would be useful, but is not required. Some familiarity with conceptual modeling (ER or UML diagrams, or RDF/S for instance) would also be useful, but not required.

IS 551 Youth Services Librarianship credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/551/)
Theory and techniques in planning, implementing and evaluating library programs/services for youth (age 0-18) in public and school libraries/media centers; the knowledge base, skills, and competencies needed by the library media professional in the development of all aspects of young people's reading/viewing/listening and information literacy skills.

IS 555 Naming and Power credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/555/)
An advanced topics seminar in subject description and access that focuses upon representation in race, gender, sexuality and other contested categories. Critical intersections of bias, exclusion, and marginalization will be explored through a variety of case studies. Implications for how we construct search and discovery systems (e.g databases, archival and museum finding aids, taxonomies and catalogues), and other tools, are crucial considerations for those engaging in cultural heritage work. Open to masters and doctoral students.

IS 556 Internet of Things credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/556/)
Relying primarily on case studies, this course will help develop the students' understanding of how the IoT enables Business Data Analytics. Lectures and readings will be focused on the impact to a company's business model created by IoT data and analytics. Because of the disruptive nature of IoT sensors or data, IT Innovation will also be discussed. While the course will reflect a practitioner's view, the material will be presented on a solid academic under-pinning.

IS 557 Applied Machine Learning: Team Projects credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/557/)
A comprehensive exploration of the applied machine learning workflow from inspiration to delivery of a machine learning solution broadly defined (i.e., from analytic finding to embedded machine learning application). This course is firmly grounded in a "learning-by-doing" teaching philosophy with pedagogical priority clearly placed on the application of machine learning to real-world data and problems. Ongoing and intense practical experiences in team-based project management and work are another cornerstone of this course. This course includes student-led reviews of existing data sources and machine learning technologies along with several team-based fact-finding and proof-of-concept implementation projects. This course is designed for students wishing to engage seriously in the practical world of machine learning implementation. Prerequisite: Students should have demonstrated ability, and must have taken one of the following courses, IS 577 (formerly IS 590 DT), IS 517 (formerly IS 590 MD), CS 412, CS 446 or a course demonstrably equivalent.

IS 558 Seminar in Organization & Representation credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/558/)
Offers an advanced graduate survey of research in areas related to research in Organization and Representation, across a wide range of topics. Designed to incorporate multiple guest lectures. Weekly class meetings will be composed of both lectures and discussions. May be repeated in the same or separate terms, to a maximum of 16 hours, if topics vary.

IS 559 CAS Project credit: 0 to 8 Hours. (https://courses.illinois.edu/schedule/terms/IS/559/)
Individual study of a problem in library and information science; forms the culmination of the Certificate of Advanced Study program. Approved for S/U grading only. May be repeated. Only eight hours will apply to the Certificate of Advanced Study. Prerequisite: Admission to Certificate of Advanced Study program in library and information science; submission of "Request to Enroll in IS 559 - CAS Project" form.

IS 560 Social Science Research in Library and Information Science credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/560/)
Introduces students to the fundamentals of doing social science research in LIS. Students will learn how to frame a research problem, choose an appropriate research method, apply it, and write up the research for presentation and publication.

IS 561 Use and Users of Information credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/561/)
Explores information needs and uses at a general level, addressing formal and informal information channels, barriers to information, issues of value, and impacts of technology. Examines information seeking practices of particular communities and within various environments, introducing recent approaches to user-centered system design and digital library development. Provides an overview of methods that can be used to study information needs, information seeking behavior, and related phenomena. Prerequisite: IS 505.

IS 562 Administration and Use of Archival Materials credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/562/)
Administration of archives and manuscript collections in various types of institutions. Theoretical principles and archival practices of appraisal, acquisition, accessioning, arrangement, description, preservation, and reference services. Topics will include: records management programs, collecting archives programs/special collections, legal and ethical issues, public programming and advocacy, and the impact of new information technologies for preservation and access. Lectures, discussion, internet demonstration, and field trips to the Special Collections Department and University Archives.

IS 563 Advanced Topics in Literature, Media and Materials credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/563/)
Variety of newly developed and advanced topics courses within Literature, Media and Materials, intended to augment the existing Information Sciences curricula. May be repeated in the same or separate terms, to a maximum of 16 hours, if topics vary.

IS 565 Cataloging for School Libraries credit: 2 Hours. (https://courses.illinois.edu/schedule/terms/IS/565/)
This course will introduce the student to the principles, practices and standards for information representation and organization in school media centers. Course content will include an introduction to original cataloging of non-standard materials (such as realia and audiovisual materials), evaluation of bibliographic records, exposure to authority control and subject access systems with a special focus on the Dewey Decimal System and Sears Subject Headings. The course will also provide an overview and exploration of different library systems/OPACS.

IS 567 Text Mining credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/567/)
The goal of this project-based course is to provide students with first-hand experience with how to create a well-formed text mining problem and how to select, transform, and mine a collection of text. Prior programming knowledge (in any language) is required. As students work on their own project, they will draw from key concepts in text mining using perspectives from both the knowledge discovery and natural language processing research communities.

IS 568 Seminar in Human-Centered Design & Systems credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/568/)
Offers an advanced graduate survey of research in areas related to research in human-centered design and systems, across a wide range of topics. Designed to incorporate multiple guest lectures. Weekly class meetings will be composed of both lectures and discussions. May be repeated in the same or separate terms, to a maximum of 16 hours, if topics vary.

IS 569 Internship credit: 0 Hours. (https://courses.illinois.edu/schedule/terms/IS/569/)
Supervised field experience designed for learning professional-level duties in an approved information-related organization or institution. Approved for S/U grading only. May be repeated in separate terms.

IS 571 Advanced Topics in Use and Users of Information credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/571/)
Variety of newly developed and advanced topics courses within the field of Use and Users of Information, intended to augment the existing Information Sciences curricula. May be repeated in the same or separate terms, to a maximum of 16 hours, if topics vary.

IS 573 Advanced Topics in Collections credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/573/)
Variety of newly developed and advanced topics courses within the field of Collections, intended to augment the existing Information Sciences curricula. Additional fees may apply. See Class Schedule. May be repeated in the same or separate terms, to a maximum of 16 hours, if topics vary.

IS 575 Metadata in Theory & Practice credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/575/)
Combines theoretical examination of the design of metadata schema with their practical application in a variety of settings. Hands-on experience in the creation of descriptive, administrative, and structural metadata, along with their application in systems such as OAI harvesting, OpenURL resolution systems, metasearch systems and digital repositories, will help students develop a thorough understanding of current metadata standards as well as such issues as crosswalking, metadata schema, metadata's use in information retrieval and data management applications, and the role of standards bodies in metadata schema development. Prerequisite: IS 505 - Information, Organization and Access (formerly IS 501 prior to FA 20) or consent of the instructor.

IS 577 Data Mining credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/577/)
Data mining refers to the process of exploring large datasets with the goal of uncovering interesting patterns. This process usually involves a number of tasks such as data collection, pre-processing, & characterization; model fitting, selection, & evaluation; classification, clustering, & prediction. Although data mining has its roots in database management, it has grown into a discipline that focuses on algorithm design (to ensure computational feasibility) & statistical modeling (to separate the signal from the noise). It draws heavily upon a variety of other disciplines including statistics, machine learning, operations research, & information retrieval. Will cover the major data mining concepts, principles, & techniques that every information scientist should know about. Lectures will introduce & discuss the major approaches to data mining; computer lab sessions coupled w/assignments will provide hands-on experience with these approaches; term projects offer the opportunity to use data mining in a novel way. Mathematical detail will be left to the students who are so inclined.

IS 578 Seminar in Research Methods credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/578/)
Offers an advanced graduate survey of research in areas related to research in research methods, across a wide range of topics. Designed to incorporate multiple guest lectures. May be repeated in the same or separate terms, to a maximum of 16 hours, if topics vary.

IS 579 Guided Research Experience credit: 0 or 1 Hours. (https://courses.illinois.edu/schedule/terms/IS/579/)
Supervised participation in information science research. Students assist in and /or conduct research under faculty or staff supervision on an information science project. The topics and nature of the work will vary. Approved for S/U grading only. Course may be repeated in separate terms, up to 2 graduate credit hours, if topics vary. Additional research must be completed for the 0 credit option. Prerequisite: Completion of either one semester or 12 credits of information sciences courses. Completion of a research participation agreement. Restricted to IS graduate students.

IS 580 Information History credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/580/)
Drawing on research in varied historical specializations, information history has become a vibrant area of study, one that improves our understanding, moreover, of today's information universe. Information history covers diverse institutions and practices -- from libraries and the book to the telegraph and postal systems, from surveillance to cartography, from documentary culture to statistical surveys -- seeking to connect them with the major developmental processes of human history. Framed in a succession of major historical epochs, topics and trends, from Antiquity to the twentieth century, this course revises our sense of the historical record by situating information explicitly within it.

IS 581 Advanced Topics in Youth Services credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/581/)
Variety of newly developed and advanced topics courses within the field of Youth Services, intended to augment the existing Information Sciences curricula. May be repeated in the same or separate semesters to a maximum of 16 hours, if topics vary.

IS 582 Advanced Topics in Librarianship credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/582/)
Variety of newly developed and advanced topics courses within the field of Librarianship, intended to augment the existing Information Sciences curricula. Additional fees may apply. See Class Schedule. May be repeated in the same or separate semesters to a maximum of 16 hours, if topics vary.

IS 583 Advanced Topics in Book History credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/583/)
Variety of newly developed and advanced topics courses within the field of Book History, intended to augment the existing Information Sciences curricula. Additional fees may apply. See Class Schedule. May be repeated in the same or separate semesters to a maximum of 16 hours, if topics vary.

IS 584 Advanced Topics in Ethics and Privacy credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/584/)
Variety of newly developed and advanced topics courses within the field of ethics and privacy, intended to augment the existing Information Sciences curricula. May be repeated in the same or separate semesters to a maximum of 16 hours, if topics vary.

IS 585 Bibliographic Metadata credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/585/)
Introduction to basic principles and concepts of descriptive and subject cataloging in the context of information service needs for various user communities. Explores principles, structures, standards, technologies and practices relating to organizing and creating access to print and non-print media. Includes coverage of subject analysis and descriptive practices. Introduces controlled vocabularies. Prerequisite: Information Organization and Access; IS 505 for Fall 2020 (previously IS 501).

IS 586 Usability Engineering credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/586/)
The course provides an introduction to: issues in Human Computer Interaction; analysis of interfaces and their use; the interface design process as an engineering activity; designing usable interfaces under constraints; and the rapid prototyping and evaluation cycle. The course covers interface design in multiple contexts including websites, web-based applications, smartphone apps, regular computer apps and new contexts of interacting with computers. Elective course for the CAS in Digital Libraries concentration.

IS 587 Seminar in Data Analytics and Data Science credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/587/)
Offers an advanced graduate survey of data analytics and data science in the information fields, across a wide range of topics. Designed to incorporate multiple guest lectures. May be repeated in the same or separate terms, to a maximum of 16 hours, if topics vary.

IS 588 Data Consulting Capstone credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/588/)
This course will help to prepare students for a competitive job market in data consulting. They will build a portfolio including evidence of effective consulting abilities, database design, and knowledge of applying data to solve real world problems. Portfolios will demonstrate theoretical and practical understandings of areas such as entity-relationship modeling, creating tables, writing queries in SQL, and data analysis for decision making.

IS 589 Independent Study credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/589/)
Permits the intermediate or advanced student opportunity to undertake the study of a topic not otherwise offered in the curriculum or to pursue a topic beyond or in greater depth than is possible within the context of a regular course. May be repeated by MS students to a maximum of 4 graduate hours. May be repeated by CAS students to a maximum of 8 graduate hours. May be repeated by PhD students to a maximum of 16 graduate hours.

IS 590 Advanced Topics in Information Foundations credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/590/)
Variety of newly developed and advanced topics courses within the field of information foundations, intended to augment the existing Information Sciences curricula. Additional fees may apply. See Class Schedule. May be repeated.

IS 591 Advanced Topics in Information Services credit: 1 to 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/591/)
Variety of newly developed and advanced topics courses within the fields of Information Services, intended to augment the existing Information Sciences curricula. May be repeated in the same or separate semesters to a maximum of 16 hours, if topics vary.

IS 592 Advanced Topics In Information Organizations credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/592/)
Variety of newly developed and advanced topics courses within the fields of Information Organization, intended to augment the existing Information Sciences curricula. May be repeated in the same or separate semesters to a maximum of 16 hours, if topics vary.

IS 593 Advanced Topics in Preservation & Tech Services credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/593/)
Variety of newly developed and advanced topics courses within the fields of Preservation & Tech Services, intended to augment the existing Information Sciences curricula. Additional fees may apply. See Class Schedule. May be repeated in the same or separate semesters to a maximum of 16 hours, if topics vary.

IS 594 Advanced Topics in Management and Policy credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/594/)
Variety of newly developed and advanced topics courses within the fields of Management and Policy, intended to augment the existing Information Sciences curricula. May be repeated in the same or separate semesters to a maximum of 16 hours, if topics vary.

IS 595 Advanced Topics in Organization & Representation credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/595/)
Variety of newly developed and advanced topics courses within the fields of Organization & Representation, intended to augment the existing Information Sciences curricula. Approved for Letter and S/U grading. May be repeated in the same or separate semesters to a maximum of 16 hours, if topics vary.

IS 596 Advanced Topics in Human-Centered Design & Systems credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/596/)
Variety of newly developed and advanced topics courses within the field of Human-Centered Design & Systems, intended to augment the existing Information Sciences curricula. Approved for Letter and S/U grading. May be repeated in the same or separate semesters to a maximum of 16 hours, if topics vary.

IS 597 Advanced Topics in Data Analytics & Data Science credit: 2 or 4 Hours. (https://courses.illinois.edu/schedule/terms/IS/597/)
Variety of newly developed and advanced topics courses within the fields of Data Analytics & Data Science, intended to augment the existing Information Sciences curricula. Approved for Letter and S/U grading. May be repeated in the same or separate semesters to a maximum of 16 hours, if topics vary.

IS 599 Thesis Research credit: 0 to 16 Hours. (https://courses.illinois.edu/schedule/terms/IS/599/)
Individual study and research. M.S. candidates, 0 to 8 hours. Doctoral candidates, 0 to 16 hours. Approved for S/U grading only. May be repeated in the same term or in separate terms. Prerequisite: MS students must submit a "Request to Enroll in IS 599 - Master's Thesis" form.