IS 351 The Design of Usable Information Interfaces credit: 3 Hours. Examines issues of Human Computer Interaction and the design of better computer interfaces. Prerequisite: Sophomore standing.

IS 390 Special Topics in Information Studies credit: 1 to 3 Hours. 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 403 Literature and Resources for Children credit: 2 to 4 Hours. 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 404 Literature and Resources for Young Adults credit: 2 to 4 Hours. 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 409 Storytelling credit: 2 to 4 Hours. 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 418 Community Engagement credit: 3 or 4 Hours. 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 445 Information Books and Resources for Youth credit: 2 to 4 Hours. 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 446 Fantasy Literature and Media for Youth credit: 2 to 4 Hours. The selection and evaluation of historical and contemporary fantasy literature and media for library collections aimed at children and young adults. Texts examined will include books, movies, and games. 3 undergraduate hours. 2 or 4 graduate hours.

IS 451 Introduction to Network Information Systems credit: 4 Hours. Hands-on introduction to technology systems for use in information environments. The course steps students through choosing, installing, and managing computer hardware and operating systems, as well as networking hardware and software. The course also explores alternatives for administering IT and how to assess emerging technologies and their applicability to library settings. While students are expected to have basic computer competencies per the School of Information Sciences admissions requirements, the goal of the course is to provide practical detailed knowledge of the technology for all levels of competency. The primary objective is to provide a conceptual understanding of the topics of the day through concrete hands-on examples of implementation. By learning the underlying concepts, students will be better prepared to help design networked systems that not only work well today, but also develop systems that can be easily adapted for the needs and technologies of tomorrow. Additional fees may apply. See Class Schedule. 4 undergraduate hours. 4 graduate hours.

IS 452 Foundations of Information Processing credit: 2 or 4 Hours. 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 453 Systems Analysis and Management credit: 3 or 4 Hours. 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.

Information listed in this catalog is current as of 10/2017
IS 456  Information Storage and Retrieval  credit: 3 or 4 Hours.
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  Introduction to Data Science  credit: 4 Hours.
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 458  Instructional Strategies and Techniques for Information
Professionals  credit: 2 to 4 Hours.
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 461  Museum Informatics  credit: 4 Hours.
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 462  Information Assurance  credit: 3 or 4 Hours.
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 482  Writing Technologies  credit: 3 or 4 Hours.
Same as ENGL 482. See ENGL 482.

IS 483  Ugrad Bioinformatics Seminar  credit: 0 to 2 Hours.
Same as CPSC 491 and INFO 491. See INFO 491.

IS 490  Advanced Topics in Information Studies  credit: 2 to 4 Hours.
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. May be repeated.
Prerequisite: For undergraduates, junior standing and IS 202, or consent
of instructor.

IS 501  Information Organization and Access  credit: 4 Hours.
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. 4 graduate
hours. No professional credit. Required M.S. in library and information
science degree core course.

IS 502  Libraries, Information and Society  credit: 2 or 4 Hours.
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. 2 or 4 graduate hours. No
professional credit. Prerequisite: Required M.S. in library and information
science degree core course.

IS 503  Use and Users of Information  credit: 4 Hours.
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. 4 graduate hours. No professional credit.
Prerequisite: IS 501.

IS 504  Reference and Information Services  credit: 4 Hours.
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. 4 graduate hours. No
professional credit.

IS 505  Administration & Management of Libraries and Information
Centers  credit: 4 Hours.
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. 4 graduate hours.
No professional credit.
IS 506  Youth Services Librarianship  credit: 4 Hours.
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. 4 graduate hours. No professional credit.

IS 507  Introduction to Bibliographic Metadata  credit: 4 Hours.
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. 4 graduate hours. No professional credit. Prerequisite: IS 501, or concurrent enrollment in IS 501 and IS 507.

IS 508  Collection Development  credit: 4 Hours.
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. 4 graduate hours. No professional credit. Prerequisite: IS 501, or concurrent enrollment in IS 501 and IS 508.

IS 510  Adult Public Services  credit: 4 Hours.
The literature, history, and problems of providing library service to the general adult user; investigation of user characteristics and needs, and the effectiveness of various types of adult services. 4 graduate hours. No professional credit.

IS 511  Bibliography  credit: 2 or 4 Hours.
Covers enumerative bibliography, the practices of compiling lists; analytical bibliography, the design, production, and handling of books as physical objects; and historical bibliography, the history of books and other library materials, from the invention of printing to the present. 2 or 4 graduate hours. No professional credit. Prerequisite: Consent of instructor.

IS 512  History of Libraries  credit: 2 or 4 Hours.
The origins, development, and evolution of libraries and related institutions, from antiquity to the twentieth century, as a reflection of literacy, recognition of archival responsibility, humanistic achievement, scientific information needs, and service to society. Same as MDIA 512. 2 or 4 graduate hours. No professional credit.

IS 514  History of Children's Lit  credit: 2 or 4 Hours.
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. 2 or 4 graduate hours. No professional credit.

IS 515  Media Literacy for Youth  credit: 2 or 4 Hours.
Provides students with theoretical knowledge and practical methods useful to librarians and other professionals working with young people and media. Building on traditional understandings of literacy, media literacy explores the consumption and production of diverse types of texts including print, images, games, and music. Topics for this course may include the role of race in media, media literacy as a catalyst for social change, and intellectual property issues related to media education. 2 or 4 graduate hours. No professional credit.

IS 516  School Library Media Center  credit: 2 or 4 Hours.
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. 2 or 4 graduate hours. No professional credit. Prerequisite: IS 506.

IS 518  Community Informatics  credit: 4 Hours.
Survey of an emerging field that studies how local, historical communities use information and communication technologies or otherwise access, create, organize, and share information. Covers key principles for working in libraries or the wider non-profit/public sectors as individuals, organizations, and communities harness new technologies and media. Prepares both professionals and researchers, whatever their technology background. Especially useful for those interested in public or community libraries, youth services, university public engagement, social work, education, and anyone interested in working with or studying underserved communities. 4 graduate hours. No professional credit.

IS 519  Soc Sc Research in LIS  credit: 4 Hours.
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. 4 graduate hours. No professional credit.

IS 522  Information Sources and Services in the Sciences  credit: 2 or 4 Hours.
Overview of the information needs and practices of researchers, practitioners, and the general public. Detailed consideration of disciplinary literatures and print and electronic reference materials. Advanced training in addressing reference questions and research problems in the sciences. 2 or 4 graduate hours. No professional credit. Prerequisite: IS 504 or consent of instructor.

IS 523  Information Sources and Services in the Social Sciences  credit: 2 or 4 Hours.
Overview of the information needs and practices of researchers, practitioners, and the general public. Detailed consideration of disciplinary literatures and print and electronic reference materials. Advanced training in addressing reference questions and research problems in the social sciences. 2 or 4 graduate hours. No professional credit. Prerequisite: IS 504 or consent of instructor.

IS 524  Information Sources and Services in the Arts and Humanities  credit: 2 or 4 Hours.
Overview of the information needs and practices of researchers, practitioners, and the general public. Detailed consideration of disciplinary literatures and print and electronic reference materials. Advanced training in addressing reference questions and research problems in the arts and humanities. 2 or 4 graduate hours. No professional credit. Prerequisite: IS 504 or consent of instructor.
IS 525  Government Information  credit: 4 Hours.
Aims to acquaint students with government publications, their variety, interest, value, acquisition, and bibliographic control, and to develop proficiency in their reference and research use; considers publications of all types and all governments (local, national, international) with special emphasis on U. S., state and federal governments, and on the United Nations and its related specialized agencies. 4 graduate hours. No professional credit. Prerequisite: IS 504 or consent of instructor.

IS 526  Searching Online Information Systems  credit: 2 or 4 Hours.
Explores the state-of-the-art in online information retrieval systems, with particular emphasis on their use as part of reference service in libraries; acquaints students with the characteristics of both bibliographic and nonbibliographic databases; and trains students in the use of at least one currently available online retrieval system. 2 or 4 graduate hours. No professional credit. Prerequisite: IS 504 or consent of instructor.

IS 527  Literacy, Reading, and Readers  credit: 4 Hours.
Reading and literacy play a central role in all areas of LIS, as well as in education, communication, literature, and writing studies. This course considers reading as a physical, social, and educational activity that is historically and culturally situated. It provides a multidisciplinary investigation into different forms of literacy and how people acquire them. Drawing upon scholarship in LIS, education, literature, history, sociology, psychology, and anthropology, and with special consideration given to age, gender, class, religion, and culture, we will expand upon traditional notions of literacy and explore the range of scholarly approaches to the study of literacy, reading, and readers. For assignments, students choose between an experiential track, which offers practical experience through volunteer work in a literacy tutoring position, or a scholarship track, which features a research project without a volunteer component. All students have the same weekly readings and share knowledge gained from their volunteer placement and research. 4 graduate hours. No professional credit.

IS 528  Adult Popular Literature  credit: 2 or 4 Hours.
A survey of genre fiction, readers' advisory services, the promotion of fiction, narrative nonfiction & media collections in libraries, the social effects of reading, and publishing as a business. Course objectives include: understanding why adults read for pleasure; gaining familiarity with popular fiction genres and their authors; understanding principles and tools of readers' advisory services; examining the issues of popular fiction publishing including the impact of technology in creating new formats; and the process of acquisition, maintenance, and marketing of popular fiction in libraries. 2 or 4 graduate hours. No professional credit.

IS 530  Information Needs of Particular Communities  credit: 2 or 4 Hours.
Special topics sections for in-depth study of the characteristics and information needs of specialist users of libraries, goals and objectives, policies, and services; reference and bibliographical aids; and effective services that satisfy these special needs. 2 or 4 graduate hours. No professional credit. May be repeated. Prerequisite: IS 504 or consent of instructor.

IS 531  Foundations of Data Curation  credit: 4 Hours.
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. 4 graduate hours. No professional credit.

IS 532  Theory & Practice of Data Cleaning  credit: 4 Hours.
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. 4 graduate hours. No professional credit.

IS 534  Data Policy Seminar  credit: 4 Hours.
This course will survey recent policy changes and the literature regarding scientific data, including archiving, repositories, legal encumbrances and access, the lifecycle of data, and strategies for reporting data 4 graduate hours. No professional credit.

IS 537  Race, Gender, and Sexuality in the Information Professions  credit: 2 Hours.
This course examines how issues of race, gender and sexuality are represented in information professions and will study how they affect, and are affected by, information technologies. Socially constructed (mis)representations (or lack of representations) of race, gender and sexual identity will be critically examined in different settings as they intersect, overlap, and impact the information use, technology practices, and the design of information resources and services in the library and information science and related fields. 2 graduate hours. No professional credit. Prerequisite: Restricted to LIS graduate students.

IS 538  Competitive Intelligence & Knowledge Management  credit: 4 Hours.
This course examines two of the most popular practices of business research: Competitive Intelligence (CI) & Knowledge Management (KM). This course provides theoretical foundations and conceptual framework of CI & KM, as students acquire skills in translating research data into actionable intelligence and managing organizations' intellectual capital systematically. This course will introduce concepts of strategic analyses of businesses, and students will also explore key KM technologies widely used in the industry. 4 graduate hours. No professional credit.

IS 539  Information Consulting  credit: 4 Hours.
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. 4 graduate hours. No professional credit.

IS 540  Applied Business Research  credit: 4 Hours.
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. 4 graduate hours. No professional credit. May be repeated in separate terms up to 8 hours if topics vary. Prerequisite: Instructor approval required.
IS 542  Data, Statistical Models and Information  credit: 4 Hours.
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. 4 graduate hours. No professional credit. Prerequisite: Graduate standing.

IS 543  Sociotechnical Information Systems  credit: 4 Hours.
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. 4 graduate hours. No professional credit.

IS 544  Library Cooperation & Networks  credit: 4 Hours.
Development of library systems, with special reference to public libraries as a norm for the development of library services; detailed treatment of library standards, the growth and development of county and regional libraries, and the role of the state library and of federal legislation. 4 graduate hours. No professional credit. Prerequisite: IS 505 or consent of instructor.

IS 545  Social Justice in the Information Professions  credit: 2 Hours.
This course is 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. 2 graduate hours. No professional credit. Prerequisite: Graduate student.

IS 546  Intellectual Freedom and Censorship  credit: 2 Hours.
Examines intellectual freedom issues throughout the United States and the world. Approaches intellectual freedom as an ethical issue based in interpretations of the First Amendment and the United Nations Declaration of Human Rights. The course encourages information professionals to view commitment to intellectual freedom as a core professional value and gives students the opportunity to develop skills and strategies needed to navigate censorship controversies in the workplace. 2 graduate hours. No professional credit. Prerequisite: IS 502 or consent of instructor.

IS 547  Information Services for Diverse Populations  credit: 2 or 4 Hours.
This course is designed to prepare future information professionals to develop and provide inclusive services to underrepresented populations, and to analyze and evaluate services to ensure equality of access to information in a range of institutional settings. Through readings, discussion, guest lectures, and site visits, students will explore diversity issues that impact information services and develop skills for planning, implementing, and evaluating programs and services for addressing these issues. Specific diversity issues include race and ethnicity; education; language; literacy; disability; gender and sexual orientation; social class; national origin; physical, psychological, and learning ability; and age. 2 or 4 graduate hours. No professional credit.

IS 548  Library Buildings  credit: 2 or 4 Hours.
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. 2 or 4 graduate hours. No professional credit.

IS 549  Economics of Information  credit: 4 Hours.
The various definitions of information in economic and social terms as discussed in library and information science as well as other literatures are related to government public policies and social policies. Issues such as information as a commodity and as a public good are explored. The impact of the economics of information and related public policies on libraries and information centers is discussed from a national and international perspective. 4 graduate hours. No professional credit.

IS 555  Usability Engineering  credit: 4 Hours.
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. 4 graduate hours. No professional credit.

IS 556  Implementation of Information Storage and Retrieval Systems  credit: 4 Hours.
Engages the design, deployment and evaluation of information retrieval systems in a variety of environments. Emphasis is twofold. First, students will study advance methods of query and document representation and related formalisms for performing retrieval. Second, students will work with a variety of data sets and several open-source information retrieval and information analysis software suites. The course is intended to extend students’ understanding of state-of-the art search and retrieval methods. 4 graduate hours. No professional credit. Prerequisite: IS 452 (either the 2 credit hours or the 4 credit hours are acceptable) and IS 456.

IS 559  Network Analysis  credit: 4 Hours.
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. 4 graduate hours. No professional credit.
IS 560  Digital Libraries  credit: 4 Hours.
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. 4 graduate hours. No professional credit. Prerequisite: IS 501 or consent of instructor; previous or concurrent enrollment in IS 452 (either the 2 credit hours or the 4 credit hours of IS 452 are acceptable), or proof of competency in programming.

IS 561  Information Modeling  credit: 4 Hours.
An introduction to the foundations of information modeling methods used in current digital library applications. The specific methods considered include relational database design, conceptual modeling, markup systems, and ontologies. The basic concepts underlying these methods are, respectively, relations, entities, grammars, and logic. Implementations include relational database design, ER/EER/UML diagrams, XML markup languages, and RDF/OWL semantic web languages. First order logic is emphasized throughout as the foundational framework for information modeling in general, and for contemporary web-based information management and delivery systems (including semantic web technologies) in particular. 4 graduate hours. No professional credit.

IS 562  Metadata in Theory & Practice  credit: 4 Hours.
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. 4 graduate hours. No professional credit. Prerequisite: IS 501 or consent of instructor.

IS 567  Academic Librarianship  credit: 4 Hours.
Introduces the higher education environment in which academic librarians and other information professionals operate in order to prepare students for leadership roles both within academic libraries and in their parent institutions. This course explores academic librarianship through a variety of lenses including: history and organization of higher education; accreditation; characteristics of students; roles of faculty and other campus professionals; and current issues and challenges. 4 graduate hours. No professional credit.

IS 568  Theological Librarianship  credit: 2 or 4 Hours.
Provides an overview of the contexts, materials, services, and issues characterizing theological librarianship. Students interact with a number of librarians currently working in the field. 2 or 4 graduate hours. No professional credit.

IS 569  Financial Management  credit: 4 Hours.
Designed to familiarize the student with the basic principles of library financial administration, including budgeting and planning within the mission and goals of the organization. Provides an orientation to the variety of financial management techniques appropriate for libraries and information centers, with an emphasis on sources for obtaining financial support, controlling expenditures, creating and controlling budgets, financial decision making and exploring specific financial and budgetary problems for the major operational areas of libraries - public services, technical services, information technology and facilities. 4 graduate hours. No professional credit.

IS 577  Advanced Bibliographic Metadata  credit: 4 Hours.
Seminar on theoretical and applied approaches to cataloging, including the creation and management of complex descriptive and subject metadata. Topics include current developments in conceptual models for bibliographic materials; information processing and mapping; socio-cultural and critical warrant; and ethical foundations of information organization. Students will engage critically with principles and practices in the application of bibliographic standards in a variety of contexts. 4 graduate hours. No professional credit. Prerequisite: IS 507 or consent of instructor.

IS 578  Technical Services Functions  credit: 4 Hours.
Seminar on the principles, problems, trends, and issues of acquiring, identifying, recording, and conserving/preserving materials in all types of libraries and information centers; includes the special problems of serials management; emphasizes service aspects. 4 graduate hours. No professional credit.

IS 580  Rare Book and Special Collections Librarianship  credit: 2 Hours.
Designed as a practical introduction to Rare Book and Special Collections Librarianship, to cover for the neophyte as well as the experienced librarian the many issues of these departments' responsibilities, including selection, acquisition, receiving, cataloging, processing, shelving, circulation, inter-library loan, reference, preservation and conservation, security, exhibition, publication, and so forth, including the uses of information technology. 2 graduate hours. No professional credit.

IS 581  Administration and Use of Archival Materials  credit: 4 Hours.
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. 4 graduate hours. No professional credit.

IS 582  Preserving Info Resources  credit: 4 Hours.
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. 4 graduate hours. No professional credit.

IS 583  Grad Bioinformatics Seminar  credit: 1 to 2 Hours.
Same as CPSC 591 and INFO 591. See INFO 591.
IS 584 Archival Arrangement and Description  credit: 2 Hours.
Provides seminar discussions and a hands-on processing experience that applies current theories and practices utilized to solve the most common problems that are encountered by today's archivists and curators when arranging and describing historical records, archives, manuscripts, and artifacts. Issues of intellectual and physical arrangement, description, and access are addressed. 2 graduate hours. No professional credit.

IS 585 International Librarianship  credit: 4 Hours.
Focuses on international librarianship (how librarians communicate on international issues) and how that differs from comparative librarianship (the comparative study of library services in specific contexts). Examines how concepts such as "one-world" and "free flow of information" are valid in the international information arena; the importance of internationalizing library education; the role of international information agencies and the need for formulating information policies. Local and regional issues relating to library and information science are studied in the context of global issues. 4 graduate hours. No professional credit.

IS 586 Digital Preservation  credit: 4 Hours.
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. 4 graduate hours. No professional credit.

IS 587 History and Foundations of Library and Information Science  credit: 4 Hours.
This required course for all first-semester library and information science (LIS) doctoral students introduces students to the historical foundations of LIS. Examinations of the interactions of socio-cultural, technological and professional factors underlying the emergence of LIS provide a basis for exploring more recent developments in theory and practice. 4 graduate hours. No professional credit. Prerequisite: LIS doctoral student in their first semester.

IS 588 Research Design in Library and Information Science  credit: 4 Hours.
Provides an introduction to the design of LIS research, beginning with an in-depth consideration of the philosophical and logical underpinnings of research. A brief survey of different methods used in LIS 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 Ph.D. course. 4 graduate hours. No professional credit.

IS 590 Advanced Problems in Information Sciences  credit: 1 to 4 Hours.
Variety of newly developed and special topics courses on different aspects of the information sciences intended to augment the existing curriculum, offered as sections of IS 590. Additional fees may apply. See Class Schedule. 1 to 4 graduate hours. No professional credit. May be repeated.

IS 592 Independent Study  credit: 2 to 4 Hours.
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. 2 to 4 graduate hours. No professional credit. May be repeated by M.S. students to a maximum of 4 graduate hours; CAS students, a maximum of 8 graduate hours; Ph.D. students, a maximum of 16 graduate hours. Prerequisite: Submission of "Request to Enroll in IS 592" form.

IS 593 CAS Project  credit: 0 to 8 Hours.
Individual study of a problem in library and information science; forms the culmination of the Certificate of Advanced Study program. 0 to 8 graduate hours. No professional credit. 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 593 - CAS Project" form.

IS 594 Information Sciences Practice  credit: 0 Hours.
Full-time or part-time practice of of any information sciences in an off-campus information science environment. 0 graduate hours. No professional credit. Approved for S/U grading only. May be repeated. Prerequisite: IS students only.

IS 599 Thesis Research  credit: 0 to 16 Hours.
Individual study and research. 0 to 16 graduate hours. No professional credit. Approved for S/U grading only. May be repeated. M.S. candidates, 0 to 8 hours. Doctoral candidates, 0 to 16 hours. Prerequisite: MS students must submit a "Request to Enroll in IS 599 - Master's Thesis" form.