The programs of the School of Information and Library Science (SILS) are designed to prepare students for professional employment and advanced study in the fields of information and library science. The school offers graduate instruction leading to the degrees of master of science in information science (M.S.I.S.), master of science in library science (M.S.L.S.), professional science master's degrees (P.S.M.) in digital curation and biomedical and health informatics, doctor of philosophy (Ph.D.) in information and library science, and a doctor of philosophy (Ph.D.) in health informatics. The school also offers an undergraduate major in information science (B.S.I.S.) and an undergraduate minor in information systems. Within these degree programs, students complete a core set of courses and build their own specialized program of studies on this foundation.

The goal of the M.S.I.S. program is to enable students to contribute to the design, development, and maintenance of information systems and networks; lead the development of new technologies and new applications relating to the delivery of information; and demonstrate a theoretical knowledge of information science, including the theory of information storage and retrieval, systems science, and social, political, and ethical implications of information systems.

With an M.S.I.S. degree, students find jobs in areas that include (among others) information system analysis design, development, and support; database design and administration; user experience design (including interface design and usability testing); website design and management; social media; information resource and knowledge management; information security; and competitive intelligence.

The goal of the M.S.L.S. program is to help students become leaders in the dynamic world of libraries and information organizations as they change to address 1) the needs of communities that are becoming more diverse, 2) an increasing multiplicity of information formats and technologies, and 3) a global perspective toward knowledge barriers and access. Students should be proficient in the theories and practices used in libraries, archives, and other cultural institutions, including effective communication across differing ethical, cultural, political, social, and emotional perspectives.

Typical job titles for graduates include library director, archives manager, records manager, digital librarian, documents librarian, cataloger, public and reference services librarian, school librarian, acquisitions and collection manager, youth librarian, community engagement/outreach librarian, database administrator, special collections librarian, academic library subject specialist, and systems librarian.

The 48 credit hours of coursework is selected, in consultation with the student's faculty advisor, from the information and library science curriculum or, as appropriate, from related subject fields in other schools and departments of the University or at neighboring universities. A capstone course, INLS 992, offers students the opportunity to write a research paper or complete a group practicum project. A theme within the curriculum for both master's degrees is evidence-based practice, which requires students to interpret and apply existing research to their professional situations, as well as to design and conduct their own research where necessary data is not otherwise available.

Graduate certificates within either the M.S.L.S. or the M.S.I.S. are available in the areas of: applied data science, biomedical imaging science, bioinformatics, computational linguistics, digital curation, digital humanities, and public health informatics. A program leading to a certificate as a school library media coordinator is also available as part of the M.S.L.S.

The School of Information and Library Science participates in several dual or cooperative degree programs. Participation in any dual-degree program requires separate admission to both degree programs. These include dual-degree programs with:

- the Department of Health Policy and Management, Gillings School of Global Public Health, which combines the master of health administration (M.H.A.) or the masters of science in public health (MSPH) degree with either the M.S.L.S. or M.S.I.S.
- the Department of Art, which combines the master of arts in art history (M.A.) with either the M.S.I.S. or M.S.L.S. degree
- the School of Government, which combines the master of public administration (M.P.A.) with either the M.S.I.S. or M.S.L.S. degree
- the School of Law, which combines the juris doctor (J.D.) degree with either the M.S.L.S. or the M.S.I.S degree
- A cooperative program allows students to combine the master of arts (M.A.) in public history at North Carolina State University with either the M.S.L.S. of the M.S.I.S.
- A fast track B.S.I.S to M.S.I.S or M.S.L.S degree
- A fast track B.S. in Environmental Science or B.A. in Environmental Studies to M.S.I.S

The basic requirement for admission to the master’s programs is a bachelor’s degree from a recognized college or university. The student’s undergraduate work should demonstrate a strong foundation in liberal arts and sciences. Each master’s student is expected to enter the program with a foundation in the basic technological tools (e.g., HTML, CSS, databases) employed in the field. Applicants must meet the requirements for The Graduate School. For details about the entrance requirements and the curriculum for the master’s programs, see the program descriptions available on the school’s website (http://sil.s.unc.edu/programs/).

The professional science master’s (P.S.M.) in biomedical and health informatics is an interdisciplinary program that prepares the next generation of health informatics leaders. The degree consists of 35 credits and requires about 1.5 academic years (17 months) of full-time study or 2(+ years) of part-time study to complete. There are two tracks: public health informatics and clinical informatics. Students in each program track complete a practicum consisting of an internship in a health care, public health, health research, or health information technology organization that includes a project synthesizing knowledge gleaned from the entire program curriculum.

The professional science master’s (P.S.M.) in digital curation is a 30-credit-hour, online degree that focuses on digital curation. A comprehensive, project-oriented curriculum allows students to develop the core skills, knowledge, and competencies for ensuring the longevity, authenticity, discoverability, and usability of digital assets.

The doctor of philosophy (Ph.D.) in health informatics is a 55-credit, interdisciplinary program that emphasizes advanced database
management, analytics methods and evaluation, and human-computer interactions in health informatics.

The doctor of philosophy in information and library science (Ph.D.) is a research degree. Thus, the purpose of the doctoral program in SILS is to educate scholars who are capable of addressing problems of scholarly consequence in the field of information and library science. Each student will develop a program of studies that is tailored to individual interests and career goals. Required classes include a one semester seminar on research issues and questions (INLS 881) and completion of a course in statistics. Additional courses in research methods and theory development are recommended, as are research experience and substantive content courses that are related to a student’s research interests. There are also opportunities for students to develop teaching skills through both coursework and teaching experience.

The school is located in Manning Hall, which houses classrooms as well as the administrative and faculty offices; ibiblio.org (http://ibiblio.org), one of the most popular Web sites on the Internet; Center for Information, Technology and Public Life (http://citap.unc.edu/) (CITAP) is a bold initiative at the University of North Carolina at Chapel Hill dedicated to researching, understanding, and responding to the growing impact of the internet, social media, and other forms of digital information sharing; The Center for Technology Policy (https://techpolicy.unc.edu/) (CTP) seeks to craft public policy for a better internet. Utilizing an interdisciplinary academic framework, CTP works to identify knowledge gaps and develop actionable policy frameworks that will enable us to realize the potential benefits of technology while minimizing its harms and the Information and Technology Resource Center (ITRC). The ITRC includes the Information and Library Science Library, which holds more than 100,000 volumes. Those interested in any of the SILS degree programs should consult the SILS website (http://sils.unc.edu) or request information from the School of Information and Library Science, CB #3360, 100 Manning Hall, The University of North Carolina at Chapel Hill, Chapel Hill, N.C. 27599-3360. E-mail: info@ils.unc.edu.

Professors
Jaime Arguello
Jeffrey Bardzell, Dean
Robert Capra
Melanie Feinberg
David Gotz
Sandra Hughes-Hassell
Christopher (Cal) Lee
Gary Marchionini, Cary C. Boshamer Distinguished Professor
Javed Mostafa
Arcot Rajasekar
Brian Sturm,
Helen R. Tibbo, Alumni Distinguished Professor

Associate Professors
Tressie McMillan Cottom
Bradley M. Hemminger
Mohammad Hossein Jarrahi, McColl Term Professor
Lukasz Mazur
Ryan Shaw

Assistant Professors
Alexandra Chassanoff (https://sils.unc.edu/people/alexandra-chassanoff/)
Mariel (Maggie) Melo

William (Willie) Payne
Francesca Tripodi
Yue (Ray) Wang
Joseph Winberry

Professors of the Practice
Ericka Patillo, Associate Dean for Academic Affairs
Matt Perault

Research Assistant Professor
Anita Crescenzi

Teaching Associate Professor
Ronald Bergquist

Teaching Assistant Professors
Michael Fox
Elliott Kuecker
Casey H. Rawson
Megan A. Winget

NOTE: The prefix, or subject code, for all School of Information and Library Science courses is INLS. When a prerequisite is listed for a course, it may be assumed that an equivalent course taken elsewhere or permission of the instructor also fulfills the prerequisite or corequisite. The course instructor must approve the equivalency of the substitute course. Although graduate students may take courses numbered below 400, they will not receive credit toward a graduate degree for those courses.

INLS
Advanced Undergraduate and Graduate-level Courses
INLS 418. Human Factors in System Design. 3 Credits.
Design, implementation, and evaluation of interfaces for computer systems. User-based techniques, usability issues, and human factors.

Rules & Requirements
Requisites: Prerequisite, INLS 382.
Grading Status: Letter grade.

INLS 465. Understanding Information Technology for Managing Digital Collections. 3 Credits.
Prepares students to be conversant with information technologies that underlie digital collections in order to evaluate the work of developers, delegate tasks, write requests for proposals, and establish policies and procedures. Teaches students how to think about information technology systems and recognize and manage interdependencies between parts of the systems.

Rules & Requirements
Grading Status: Letter grade.
INLS 467. Introduction to Information Security. 3 Credits.
Students will learn about many of the current issues facing businesses as well as how to prevent and discuss these issues and controls in depth. Focus will be placed upon preventing loss of information and protecting networks. Students should be able to understand any security control, describe its usage and rationale, as well as test and verify these controls are working as expected.

Rules & Requirements
Requisites: Prerequisite, INLS 161.
Grading Status: Letter grade.

INLS 490. Selected Topics. 1-3 Credits.
Exploration of an introductory-level special topic not otherwise covered in the curriculum. Previous offerings of these courses do not predict their future availability; new courses may replace these.

Rules & Requirements
Repeats Rules: May be repeated for credit; may be repeated in the same term for different topics; 9 total credits. 9 total completions.
Grading Status: Letter grade.

INLS 493. Professional Field Experience. 1 Credits.
Second field experience course to be offered to coincide with the student's information science project in a local organization. Enrollment restricted to IS majors and minors; Instructor permission required.

Rules & Requirements
Requisites: Prerequisite, INLS 393.
Grading Status: Pass/Fail.

INLS 500. Human Information Interactions. 3 Credits.
The behavioral and cognitive activities of those who interact with information, with emphasis on the role of information mediators. How information needs are recognized and resolved; use and dissemination of information.

Rules & Requirements
Requisites: Prerequisite, INLS 203 or graduate standing.
Grading Status: Letter grade.

INLS 501. Information Resources and Services. 3 Credits.
Analysis, use, and evaluation of information and reference systems, services, and tools for both printed and electronic delivery. Provides a foundation in electronic information search techniques, question negotiation, interviewing, and instruction.

Rules & Requirements
Grading Status: Letter grade.

INLS 509. Information Retrieval. 3 Credits.
Study of information retrieval and question answering techniques, including document classification, retrieval and evaluation techniques, handling of large data collections, and the use of feedback.

Rules & Requirements
Grading Status: Letter grade.
Same as: COMP 487.

INLS 512. Applications of Natural Language Processing. 3 Credits.
Natural language processing (NLP) uses mathematics, machine learning, linguistics, and computer science to make language computationally accessible and analyzable. In this course, you will learn to do essential NLP tasks using Python and survey a selection of NLP applications to describe the problems or tasks each addresses, the materials and methods used, and how the applications are evaluated. At least a semester of Python or equivalent practical experience is highly recommended.

Rules & Requirements
Grading Status: Letter grade.
Same as: COMP 486.

INLS 513. Resource Selection and Evaluation. 3 Credits.
Identification, provision, and evaluation of resources to meet primary needs of clientele in different institutional environments.

Rules & Requirements
Grading Status: Letter grade.

INLS 515. Consumer Health Information. 3 Credits.
Examines concepts of health, health conditions, policy, and information collections and services from social and cultural perspectives. Analysis and design for provision and access to consumer health information services.

Rules & Requirements
Grading Status: Letter grade.

INLS 520. Organization of Information. 3 Credits.
Introduction to the problems and methods of organizing information, including information structures, knowledge schemata, data structures, terminological control, index language functions, and implications for searching.

Rules & Requirements
Grading Status: Letter grade.

INLS 523. Introduction to Database Concepts and Applications. 3 Credits.
Design and implementation of basic database systems. Semantic modeling, relational database theory, including normalization, indexing, and query construction, SQL.

Rules & Requirements
Grading Status: Letter grade.

INLS 525. Electronic Records Management. 3 Credits.
Explores relationships between new information and communication technologies and organizational efforts to define, identify, control, manage, and preserve records. Considers the importance of organizational, institutional and technological factors in determining appropriate recordkeeping strategies.

Rules & Requirements
Grading Status: Letter grade.

INLS 530. Young Adult Literature and Related Materials. 3 Credits.
A survey of print and nonprint library materials particularly suited to the needs of adolescents.

Rules & Requirements
Grading Status: Letter grade.
INLS 534. Youth and Technology in Libraries. 3 Credits.
This course encourages students to explore the array of technologies available to children and adolescents, the issues surrounding the use of technology, the role of caregivers, and potential impacts on development.

Rules & Requirements
Grading Status: Letter grade.

INLS 541. Information Visualization. 3 Credits.
An introduction to information visualization through reading current literature and studying exemplars. The course reviews information visualization techniques, provides a framework for identifying the need for information visualization, and emphasizes interactive electronic visualizations that use freely available tools. Students will construct several visualizations. No programming skills are required.

Rules & Requirements
Grading Status: Letter grade.

INLS 550. History of the Book and Other Information Formats. 3 Credits.
The history of the origin and development of the book in all its formats: clay tablets to electronic. Coverage includes scientific and other scholarly publications, religious works, popular literature, periodicals, and newspapers.

Rules & Requirements
Grading Status: Letter grade.

INLS 551. History of Libraries and Other Information-Related Cultural Institutions. 3 Credits.
The history of cultural institutions related to information from earliest times to the present day. Includes specific institutions, trends in service and facilities, and individuals important in the development of these institutions.

Rules & Requirements
Grading Status: Letter grade.

INLS 556. Introduction to Archives and Records Management. 3 Credits.
Survey of the principles, techniques, and issues in the acquisition, management, and administration of records, manuscripts, archives, and other cultural and documentary resources in paper, electronic, and other media formats.

Rules & Requirements
Grading Status: Letter grade.

INLS 558. Principles and Techniques of Storytelling. 3 Credits.
An overview of storytelling, its historical development, and the presentation and administration of storytelling programs. The class focuses on performance skills merged with theoretical issues.

Rules & Requirements
Grading Status: Letter grade.

INLS 560. Programming for Information Science. 3 Credits.
Introduction to programming and computational concepts. Students will learn to write programs using constructs such as iteration, flow control, variables, functions, and error handling. No programming experience required.

Rules & Requirements
Grading Status: Letter grade.

INLS 561. Digital Forensics for Curation of Digital Collections. 3 Credits.
Students will learn about hardware, software, principles, and methods for capturing and curating digital data that have been stored on removable media (i.e., hard drives, floppy disks, USB memory sticks).

Rules & Requirements
Requisites: Prerequisite, INLS 560 or equivalent.
Grading Status: Letter grade.

INLS 570. Fundamentals of Programming Information Applications. 3 Credits.
Intermediate programming concepts in information processing and data analysis. Students will learn object-oriented programming, data structures, data analysis methods, and information processing techniques in the context of information science topics.

Rules & Requirements
Requisites: Prerequisite, INLS 560 or equivalent.
Grading Status: Letter grade.

INLS 572. Web Development I. 3 Credits.
Introduction to current technologies, standards, and best practices for front-end web development using HTML, CSS, and JavaScript. Includes coverage of responsive design techniques for the development of websites that render and perform well on various devices.

Rules & Requirements
Grading Status: Letter grade.

INLS 573. Mobile Web Development. 1.5 Credits.
Introduction to techniques and technologies for the development of mobile Web sites and their applications.

Rules & Requirements
Requisites: Prerequisite, INLS 161.
Grading Status: Letter grade.

INLS 582. Systems Analysis. 3 Credits.
Introduction to the systems approach to the design and development of information systems. Methods and tools for the analysis and modeling of system functionality (e.g., structured analysis) and data represented in the system (e.g., object-oriented analysis) are studied.

Rules & Requirements
Requisites: Prerequisite, INLS 382 or graduate standing.
Grading Status: Letter grade.

INLS 584. Information Ethics. 3 Credits.
An overview of ethical reasoning, followed by discussion of issues most salient to information professionals, e.g., intellectual property, privacy, access/censorship, effects of computerization, and ethical codes of conduct.

Rules & Requirements
Grading Status: Letter grade.

INLS 585. Management for Information Professionals. 3 Credits.
Introduction to management principles and practices for information professionals working in all types of organizations. Topics include planning, budgeting, organizational theory, staffing, leadership, organizational change and evaluation, and decision making.

Rules & Requirements
Grading Status: Letter grade.
INLS 586. Project Management. 1.5 Credits.
Strategies and skills needed to effectively manage projects, integrating project management theory with best practices in different organizational perspectives. Individual and team assignments include readings and case studies.

Rules & Requirements
Grading Status: Letter grade.

INLS 609. Experimental Information Retrieval. 3 Credits.
This course takes an in-depth look at experimental information retrieval systems that focus on different search tasks and are evaluated in community-wide evaluation forums such as TREC and INEX.

Rules & Requirements
Requisites: Prerequisite, INLS 509.
Grading Status: Letter grade.

INLS 613. Text Mining. 3 Credits.
This course will allow the student to develop a general understanding of knowledge discovery and gain a specific understanding of text mining. Students will become familiar with both the theoretical and practical aspects of text mining and develop a proficiency with data modeling text.

Rules & Requirements
Grading Status: Letter grade.

INLS 620. Web Information Organization. 3 Credits.
Similar programming background needed. Understand the Web as a platform for information organizing systems. Learn how the Web has been designed to be a service platform, data publishing platform, and application platform.

Rules & Requirements
Requisites: Prerequisites, INLS 520 or 560.
Grading Status: Letter grade.

INLS 623. Database Systems II: Intermediate Databases. 3 Credits.
Intermediate-level design and implementation of database systems, building on topics studied in INLS 523. Additional topics include MySQL, indexing, XML, and nontext databases.

Rules & Requirements
Requisites: Prerequisites, INLS 382 or 582, and 523.
Grading Status: Letter grade.

INLS 624. Policy-Based Data Management. 3 Credits.
Students will develop policies for managing digital repositories and persistent archives. The rules will be implemented in the integrated Rule-Oriented Data System (iRODS), which organizes and distributes data into shareable collections.

Rules & Requirements
Requisites: Prerequisite, INLS 461 or COMP 110 or 116.
Grading Status: Letter grade.

INLS 625. Information Analytics. 3 Credits.
This course introduces analytical techniques to deal with very large data sets. Students will become familiar with predictive modeling, clustering, data mining, and paradigms such as map resource.

Rules & Requirements
Requisites: Prerequisite, INLS 560; permission of the instructor for students lacking the prerequisite.
Grading Status: Letter grade.

INLS 641. Visual Analytics. 3 Credits.
This project-based course provides an overview of visual analytics. Material includes foundational concepts and theories, seminal and recent research in the field, and hands-on experience with commonly used technologies. Programming experience strongly recommended.

Rules & Requirements
Grading Status: Letter grade.

INLS 642. Data Mining. 3 Credits.
Recent years have witnessed explosive growth of heterogeneous and large-scale data sets. With a focus on practical applications, this course will survey methods for discovering knowledge from different modalities of data: item sets, matrix, text, image, time series, sequence, network, and more. Students will learn through lectures, seminar discussions, shared tasks, and a course project. Prior experience in data-oriented programming languages (e.g., Python or R) is strongly recommended.

Rules & Requirements
Grading Status: Letter grade.

INLS 651. Audio-Visual Archives Management. 1.5 Credits.
An introduction to the management of audio, film, and video archives with an emphasis on the history of recording, best practices for preservation and access, and copyright. Through selected readings, lecture, class discussion, assignment, and hands-on demonstration, students will gain an understanding of the history of recording, format identification, storage and handling, philosophy of media preservation, and copyright.

Rules & Requirements
Grading Status: Letter grade.

INLS 660. Social Media and Society: A Theoretical and Empirical Overview. 3 Credits.
Explores the evolution, implications, and complications of social media in multiple spheres of life including sociality, community, politics, power and inequality, education, and information from theoretical and empirical perspectives.

Rules & Requirements
Grading Status: Letter grade.

INLS 672. Web Development II. 3 Credits.
Study of design and implementation of applications using both client and server side configuration and programming. Example topics include PHP, ruby on Rails, and Javascript.

Rules & Requirements
Requisites: Prerequisite, INLS 572.
Grading Status: Letter grade.

INLS 685. Project Management: Strategy and Applications. 3 Credits.
This course is a broad introduction to project management principles, tools, and strategies intended for use in a variety of applications. Key topics include project planning tools, project process groups, risk assessment, budgeting/cost estimation, and team management. Through the use of readings, videos, assignments, and forum discussions, students will have the opportunity to demonstrate knowledge and understanding of the strategy behind successful project management and problem resolution.

Rules & Requirements
Grading Status: Letter grade.
INLS 690. Intermediate Selected Topics. 1-3 Credits.
Exploration of a special topic not otherwise covered in the curriculum, at an intermediate level. Previous offering of this course does not predict future availability; new courses may replace these. Topic varies by instructor.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 9 total credits. 9 total completions.
Grading Status: Letter grade.

INLS 691H. Research Methods in Information Science. 3 Credits.
Senior standing and permission of the instructor. Restricted to information science majors. An introduction to research methods used in information science. Includes the writing of a research proposal.

Rules & Requirements

IDEAs in Action Gen Ed: RESEARCH.
Grading Status: Letter grade.

INLS 692H. Honors Thesis in Information Science. 3 Credits.
Senior standing and permission of the instructor. Students in the SILS undergraduate honors program engage in independent research and write an honors thesis reporting the research under the supervision of a faculty member. Restricted to information science majors.

Rules & Requirements

IDEAs in Action Gen Ed: RESEARCH.
Grading Status: Letter grade.

INLS 696. Study in Information and Library Science. 1-3 Credits.
Study by an individual student on a special topic under the direction of a specific faculty member. Six credit maximum for master's students. Graduate faculty.

Rules & Requirements
Requisites: Prerequisite, permission of the instructor.
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 6 total credits. 6 total completions.
Grading Status: Letter grade.

INLS 697. Information Science Capstone. 3 Credits.
Senior standing required. Information science major or minor. Contemporary topics of information science, information systems, information technology, information design, and information management. Assessment of future impact of new developments.

Rules & Requirements

Graduate-level Courses

INLS 700. Scholarly Communication. 3 Credits.
Addresses how scholars approach academic work; social relationships within academia; external stakeholders in the scholarly communication system; and emerging technologies' impact upon work practices. Intended for students interested in academic libraries or digital collections of scholarly materials, and/or conducting research on scholarly communication.

Rules & Requirements
Grading Status: Letter grade.

INLS 702. Social Science Information. 1.5 Credits.
Survey of information and its needs in the social sciences, with an emphasis on information use and search strategies and on information resources.

Rules & Requirements
Requisites: Prerequisite, INLS 501.
Grading Status: Letter grade.

INLS 707. Government Information. 3 Credits.
A survey of information and data sources from all levels of U.S. government, and international bodies. Primary focus on strategies for finding information; secondary, collection management, role of librarians, etc.

Rules & Requirements
Grading Status: Letter grade.

INLS 708. Law Libraries and Legal Information. 3 Credits.
An introduction to the legal system and the development of law libraries, their unique objectives, characteristics, and functions. The literature of Anglo-American jurisprudence and computerized legal research are emphasized, as well as research techniques.

Rules & Requirements
Requisites: Prerequisite, INLS 501.
Grading Status: Letter grade.

INLS 709. Business Information. 3 Credits.
Combines an introduction to basic business concepts and vocabulary with consideration of current issues in business librarianship and of key print and electronic information sources.

Rules & Requirements
Requisites: Prerequisite, INLS 501.
Grading Status: Letter grade.

INLS 710. Evidence-Based Medicine. 3 Credits.
An introduction to the process of evidence-based medicine (EBM) including question building, searching, and critical appraisal of studies and to the supporting roles and opportunities for medical librarians.

Rules & Requirements
Grading Status: Letter grade.

INLS 711. Crisis Management for Libraries. 3 Credits.
Crisis come in many forms, from natural disasters to individual health emergencies. Preparedness, prevention, and planning are all critical components in handling these situations effectively. In this course, students will learn about risk assessment, training and other tools, disaster prevention, recovery, partnerships, and outreach as they apply to all types of libraries.

Rules & Requirements
Grading Status: Letter grade.

INLS 712. Introduction to Text Mining. 1.5 Credits.
Changes in technology and publishing practices have eased the task of recording and sharing textual information electronically. This increased quantity of information has spurred the development of a new field called text mining. The overarching goal of this new field is to use computers to automatically learn new things from textual data. Throughout the course, a strong emphasis will be placed on evaluation. Students will develop an understanding of one method through a course project.

Rules & Requirements
Grading Status: Letter grade.
INLS 714. Introduction to Information Analytics. 1.5 Credits.
The data explosion experienced by computerization of every aspect of our lives from social media to internet of things requires a deeper look at information analytics. The course introduces proven and emerging analytical techniques that can be used to deal with mountains of mostly unstructured data. We will look at several analytical paradigms from Predictive Modeling to Data Mining, Text Analytics to Web Analytics, Statistical Analysis to novel paradigms in Map Reduce and Storm.

Rules & Requirements
Grading Status: Letter grade.

INLS 718. User Interface Design. 3 Credits.
Basic principles for designing the human interface to information systems, emphasizing computer-assisted systems. Major topics: users' conceptual models of systems, human information processing capabilities, styles of interfaces, evaluation methods.

Rules & Requirements
Requisites: Prerequisite, INLS 582.
Grading Status: Letter grade.

INLS 719. Usability Testing and Evaluation. 3 Credits.
This course will introduce central concepts in usability engineering, testing and evaluation including: UX lifecycle, contextual inquiry, formal and informal evaluation techniques, measures, metrics, qualitative and qualitative analysis, evaluation reporting.

Rules & Requirements
Requisites: Prerequisites, INLS 382 or INLS 582.
Grading Status: Letter grade.

INLS 720. Metadata Architectures and Applications. 3 Credits.
Examines metadata in digital environment. Emphasizes the development and implementation of metadata schemas in distinct information communities and the standards and technological applications used to create machine understandable metadata.

Rules & Requirements
Grading Status: Letter grade.

INLS 721. Cataloging Theory and Practice. 3 Credits.
Covers principles, practices, and future trends for cataloging library resources. Topics include RDA/AACR2, MARC, authority control, subject analysis, classification, and cataloging of print, nonprint, and digital resources.

Rules & Requirements
Grading Status: Letter grade.

INLS 722. Introduction to Metadata Architectures and Applications. 1.5 Credits.
Examines fundamental concepts central to structured metadata implementations and surveys the many types of standards that attempt to harmonize description and enable interoperable systems. The course situates the challenge of implementing standards for interoperable data within the messy reality of persistent interpretive diversity. Students cannot receive credit for both INLS 722 and INLS 720.

Rules & Requirements
Grading Status: Letter grade.

INLS 723. Database Systems III: Advanced Databases. 3 Credits.
Advanced study of database systems. Topics include database design, administration, current issues in development and use, optimization, indexing, transactions, and database programming.

Rules & Requirements
Requisites: Prerequisite, INLS 623.
Grading Status: Letter grade.

INLS 724. Introduction to Electronic Records Management. 1.5 Credits.
We explore the management and preservation of electronic records for maintaining institutional accountability; protecting rights of citizens, employees and customers; supporting efficient operations; perpetuating social memory; and helping individuals to integrate the past into their sense of identity. We begin by considering the messy recordkeeping environment that surrounds us and then build up a set of concepts, tools and strategies that information professionals can use to help shape more appropriate, valuable and sustainable recordkeeping systems.

Rules & Requirements
Grading Status: Letter grade.

INLS 726. Big Data and NoSQL for Data Science. 1.5 Credits.
This class will introduce students to current and emerging practices for dealing with big data and large-scale database systems used by many social networking and e-commerce services. These applications are highly data intensive and use novel algorithms and NoSQL databases that are mainly open source, non-schema oriented, having weak consistency properties and heavily distributed over large and evolving clusters of off-the-shelf server systems. We will look at several such systems in this course.

Rules & Requirements
Requisites: Prerequisite, INLS 523 or equivalent or permission from the instructor.
Grading Status: Letter grade.

INLS 732. Children's Literature and Related Materials. 3 Credits.
Survey of literature and related materials for children with emphasis on 20th-century authors and illustrators.

Rules & Requirements
Grading Status: Letter grade.

INLS 733. Administration of Public Library Work with Children and Young Adults. 3 Credits.
Objectives and organization of public library services for children and young adults; designed for those who may work directly with young people or who intend to work in public libraries.

Rules & Requirements
Grading Status: Letter grade.

INLS 735. Youth Services in a Diverse Society. 3 Credits.
The purpose of this course is to prepare students to work as youth services librarians in today's increasingly diverse society. The course includes a 30-hour service learning component.

Rules & Requirements
Grading Status: Letter grade.
INLS 737. Inclusive Information Services for Diverse Populations. 3 Credits.
This course will prepare students to work as ILS professionals in today's increasingly diverse society. Students will develop a theoretical base in critical race theory (CRT) and other cross-disciplinary theories.

Rules & Requirements
Grading Status: Letter grade.

INLS 739. Information Services and Specific Populations. 3 Credits.
Service, professional, and administrative issues related to information access by nontraditional information service users. The course examines trends, public policy, ethical issues, programming, and evaluation of services.

Rules & Requirements
Grading Status: Letter grade.

INLS 740. Digital Libraries: Principles and Applications. 3 Credits.
Research and development issues in digital libraries including: collection development and digitization, mixed mode holdings; access strategies and interfaces, metadata and interoperability, economic and social policies, and management and evaluation.

Rules & Requirements
Grading Status: Letter grade.

INLS 746. Music Librarianship. 3 Credits.
Survey of the history and practice of music librarianship, with an emphasis on administration, collection development, and public service in academic and large public libraries.

Rules & Requirements
Grading Status: Letter grade.

INLS 749. Art and Visual Information Management. 3 Credits.
A survey of the history and practice of art and visual resources librarianship/curatorship, with an emphasis on administration, collection development, copyright practices, digital resource management, and public service.

Rules & Requirements
Grading Status: Letter grade.

INLS 750. Introduction to Digital Curation. 3 Credits.
Introduces students to digital curation; focusing best practices for the creation, selection, storage, provision, and long-term preservation of digital entities. Discusses the digital/data curation life cycles and identifies the activities associated with each stage and their social, legal, ethical, and policy implications.

Rules & Requirements
Grading Status: Letter grade.

INLS 752. Digital Preservation and Access. 3 Credits.
Focuses on best practices for the creation, provision, and long-term preservation of digital entities. Topics include digitization technologies; standards and quality control; digital asset management; grant writing; and metadata.

Rules & Requirements
Grading Status: Letter grade.

INLS 753. Preservation of Library and Archive Materials. 3 Credits.
An introduction to current practices, issues, and trends in the preservation of materials for libraries and archives, with an emphasis on integrating preservation throughout an institution's operations.

Rules & Requirements
Grading Status: Letter grade.

INLS 754. Access. Outreach, and Public Service in Cultural Heritage Repositories. 3 Credits.
Explores user needs, information seeking behaviors, and provision of access to primary source materials in archives, manuscript repositories, and museums. User education and outreach are major foci.

Rules & Requirements
Requisites: Prerequisite, INLS 501.
Grading Status: Letter grade.

INLS 755. Archival Appraisal. 3 Credits.
Explores history, theories, techniques, and methods that archivists use to identify documents and other materials of enduring value for long-term preservation.

Rules & Requirements
Requisites: Prerequisite, INLS 556.
Grading Status: Letter grade.

INLS 757. Principles and Practices in Archival Description. 3 Credits.
Recommended preparation, INLS 556. Explores the history, principles, development, and use of archival description with a focus on EAD and MARC structures. Presents authority and subject analysis work and description for special formats.

Rules & Requirements
Requisites: Prerequisite, INLS 556.
Grading Status: Letter grade.

INLS 758. International and Cross-Cultural Perspectives for Information Management. 3 Credits.
Examines information in society for selected nations/cultures. Compares institutions, processes, and trends in the globalized information management in the face of barriers of language and culture.

Rules & Requirements
Grading Status: Letter grade.

INLS 760. Web Databases. 3 Credits.
Prerequisite, INLS 572 and 623. Students will gain experience with and evaluate PC and Unix Web database platforms.

Rules & Requirements
Grading Status: Letter grade.
INLS 761. **Data Analysis. 1.5 Credits.**
This course provides fundamental skills for developing software for the analysis of structured data sets. Students will learn data analysis techniques using numeric, textual, and tabular data in the context of data science topics such as information retrieval, textual analysis, and basic machine learning. The course combines conceptual understanding of data structures and algorithms with practical techniques for implementation and debugging. Course concepts are taught using Python. For Certificate in Applied Data Science students.

**Rules & Requirements**
**Requisites:** Prerequisite, COMP 110 for undergraduates only or INLS 560 or equivalent.
**Grading Status:** Letter grade.

INLS 765. **Information Technology Foundations for Managing Digital Collections. 1.5 Credits.**
Prepares students to be conversant with information technologies that underlie digital collections in order to evaluate the work of developers, delegate tasks, write requests for proposals, and establish policies and procedures.

**Rules & Requirements**
**Grading Status:** Letter grade.

INLS 766. **Audit and Certification of Trustworthy Digital Repositories. 1.5 Credits.**
This course will address international standards for repository design and audit; risk assessment and mitigation; repository audit and certification tools and processes; criteria for trustworthiness; and the development of specific workflows to support trustworthy digital curation functions. It is also the first step in preparing for repository self-audits and the Trustworthy Digital Repository Auditor’s credential to become an auditor of trustworthy digital repositories (ISO 16363).

**Rules & Requirements**
**Grading Status:** Letter grade.

INLS 767. **Information Assurance. 3 Credits.**
Information assurance is a broader concept than (computerized) information security. It deals with aspects of data integrity, privacy, paper and human security issues, and security from several perspectives: legal issues, technical tools and methods, social and ethical concerns, and organization’s policies and procedures, and standards. Previously offered as INLS 566.

**Rules & Requirements**
**Grading Status:** Letter grade.

INLS 772. **Applied Statistics, Machine Learning, & Data Communication. 3 Credits.**
An applied course introducing computational statistical analysis, machine learning, data exploration and communication with a focus on applied concepts as encountered within common data science applications.

**Rules & Requirements**
**Requisites:** Prerequisites, COMP 110 and INLS 560, 761, and 773.
**Grading Status:** Letter grade.

INLS 773. **Database for Data Science. 1.5 Credits.**
This course will introduce the basic concepts and implementations of relational database management systems suited for data science applications. Topics include user requirements and specifications, ER models, database programming including SQL, data quality, and applications.

**Rules & Requirements**
**Grading Status:** Letter grade.

INLS 774. **Applied Data Ethics. 1.5 Credits.**
This course will introduce students to ethical issues faced by data scientists in creation, collection, curation, and use of data. It addresses issues at multiple scales. Students begin with an overview of ethical frameworks and apply them to cases through the course. Readings and class discussions will be drawn from current events. The course is heavily discussion and participation-based, and students are expected to bring examples of ethical scenarios to class sessions.

**Rules & Requirements**
**Grading Status:** Letter grade.

INLS 775. **Applied Data Curation and Management. 1.5 Credits.**
Introduce to digital and data curation in a wide array of environments including business, government, and academia. Topics include: the Data Curation Lifecycle; research data management; data sharing; challenges and benefits of big data, good data, open data, and FAIR data; the ethics of data collection, analysis, and storage; data sharing and reuse for the academic, government, and business sectors; and the roles of data management plans in all data venues.

**Rules & Requirements**
**Grading Status:** Letter grade.

INLS 776. **Ethics, Values, and Society. 3 Credits.**
This course explores ethical issues related to information, data, knowledge, and technology in various individual, community, and societal contexts.

**Rules & Requirements**
**Grading Status:** Letter grade.

INLS 777. **Perspectives on Information, Technology, and People. 3 Credits.**
Examines the relationships between information, technology, and people from an array of disciplinary, professional, cultural, and other orientations. Survey from historical and future viewpoints. Explores the application of diverse perspective to understand current matters of concern.

**Rules & Requirements**
**Grading Status:** Letter grade.

INLS 778. **Research Methods and Proposal Development. 3 Credits.**
During this course each student will prepare a proposal for the work to be completed during the following semester for their masters paper/project (INLS 992). Students will also receive an introduction to research methods used in information and library science, exploring the design, interpretation, analysis and application of published research.

**Rules & Requirements**
**Requisites:** Prerequisites, INLS 776 and INLS 777.
**Grading Status:** Letter grade.
INLS 779. Practicum Project Development. 3 Credits.
This course will prepare students to conduct their capstone practicum. It includes a broad introduction to project management principles, tools, and strategies intended for use in a variety of applications.

Rules & Requirements
Requisites: Prerequisites, INLS 776 and 777.
Grading Status: Letter grade.

INLS 782. Library Assessment. 3 Credits.
Addresses evaluation and assessment activities in libraries. Existing tools for evaluation library operations will be considered. Students will design and conduct their own evaluation of one or more library operations.

Rules & Requirements
Grading Status: Letter grade.

INLS 783. Library Instruction & Pedagogy. 3 Credits.
Examines the role of school, public, and academic librarians in providing instruction. Pedagogy, learning theories, information literacy standards and curricula, and assessment methods are addressed.

Rules & Requirements
Grading Status: Letter grade.

INLS 784. Information, Values, Ethics, and Action. 3 Credits.
This course examines values and ethics and their application to information, data, knowledge, and technology in various contexts. Will include some formal frameworks for ethical reasoning and examination of current and recent issues.

Rules & Requirements
Requisites: Prerequisites, INLS 384 (undergraduates only) and permission of instructor.
Grading Status: Letter grade.

INLS 787. Legal Issues for Librarians. 3 Credits.
Students will learn to read/analyze legal materials, identify major legal issues and legal regulations governing librarians, and use legal information to create policies and guide best practice in particular institutions.

Rules & Requirements
Grading Status: Letter grade.

INLS 789. Big Data, Algorithms and Society. 3 Credits.
This course examines the effect of big data on politics and the public sphere, how social media affects social movements, and the privacy and security vulnerabilities exposed by the coming Internet of Things. There can be potential negative societal consequences of social media and big data; this course studies the realities of the intersection of big data, algorithmic manipulation of data, and societal understanding of them.

Rules & Requirements
Grading Status: Letter grade.
INLS 800. Seminar Series in Digital Curation. 1.5 Credits.
This course will provide brief introductions to materials that do not otherwise fit into the 31 credit format of the PSM in Digital Curation degree. This course will cover established topics but also late-breaking developments so as to keep students up-to-date with changes in tools, practices, and standards. A lecture or interview with a digital curation expert will be posted biweekly.

Rules & Requirements
Grading Status: Letter grade.

INLS 818. Seminar in Human-Computer Interaction. 3 Credits.
Research and development in design and evaluation of user interfaces that support information seeking. Major topics: interactivity, needs assessment, query and browser interactions, interactive design and maintenance, usability testing.

Rules & Requirements
Requisites: Prerequisite, INLS 718; permission of the instructor for students lacking the prerequisite.
Grading Status: Letter grade.

INLS 841. Seminar in Academic Libraries. 3 Credits.
Study of problems in the organization and administration of college and university libraries with emphasis on current issues in personnel, finance, governance, and services.

Rules & Requirements
Grading Status: Letter grade.

INLS 842. Seminar in Popular Materials in Libraries. 3 Credits.
Selected topics relating to the roles of various types of libraries in the provision and preservation of popular materials (light romances, science fiction, comic books, etc.) existing in various forms (print, recorded sound, etc.).

Rules & Requirements
Grading Status: Letter grade.

INLS 843. Seminar in Public Libraries. 3 Credits.
Required preparation, completion of 12 semester hours. Selected topics in public library services, systems, networks, and their management. Current issues are emphasized, along with the interests of the participants.

Rules & Requirements
Grading Status: Letter grade.

INLS 857. Seminar in Rare Book Collections. 3 Credits.
A study of the nature and importance of rare book collections; problems of acquisition, organization, and service.

Rules & Requirements
Grading Status: Letter grade.

INLS 873. Research Practicum. 1-3 Credits.
Doctoral students will work on faculty-sponsored or off-site research projects to gain foundational research skills. Students may be involved in research design, data collection, data analysis, or other research-related activities.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 12 total credits. 12 total completions.
Grading Status: Letter grade.

INLS 881. Research Issues and Questions I. 3 Credits.
Doctoral standing or permission of the instructor. Intensive and systematic investigation of the fundamental ideas in information and library science. Exploration and discussion in seminar format. Must be taken in fall semester followed by INLS 882 in spring.

Rules & Requirements
Grading Status: Letter grade.

INLS 882. Research Issues and Questions II. 3 Credits.
Doctoral standing or permission of the instructor. Intensive and systematic investigation of the fundamental ideas in information and library science. Exploration and discussion in seminar format. Must be taken in the spring semester immediately after INLS 881 (offered fall only).

Rules & Requirements
Grading Status: Letter grade.

INLS 883. Research Colloquium. 1 Credits.
Doctoral standing required. Presentation and discussion of research issues, questions, methods, analytical approaches by students, faculty, or visitors.

Rules & Requirements
Grading Status: Letter grade.

INLS 884. Seminar in Research Methodology. 3 Credits.
Required preparation, doctoral standing or INLS 780 for Master’s students. Permission of the instructor for students lacking this preparation. Exploration of topics related to research design and methodology in information and library science.

Rules & Requirements
Grading Status: Letter grade.

INLS 886. Graduate Teaching Practicum. 1-3 Credits.
Permission of the instructor. Doctoral students will observe and work with faculty in the classroom to gain foundational teaching skills. Students may practice designing a class session or exercise, leading a class, and/or grading.

Rules & Requirements
Repeat Rules: May be repeated for credit. 3 total credits. 3 total completions.
Grading Status: Letter grade.

INLS 887. Seminar in Theory Development. 3 Credits.
Doctoral or advanced master’s standing required. Discussion and critique of the structural components and processes utilized in theory development. Seminar provides knowledge relating to the various stages of theory building.

Rules & Requirements
Grading Status: Letter grade.

INLS 888. Seminar in Teaching and Academic Life. 3 Credits.
Doctoral student or advanced master’s standing required. Examines teaching, research, publication, and service responsibilities. Provides perspective on professional graduate education and LIS educational programs. Explores changing curricula and discusses ethics, rewards, and problems of academic life.

Rules & Requirements
Grading Status: Letter grade.
INLS 889. Seminar in Teaching Practice.  1 Credits.
Doctoral standing required. For doctoral students currently involved in teaching activities, these regular seminar meetings are designed to discuss relevant literature and aspects of the teaching experience.

Rules & Requirements
Requisites: Pre- or corequisite, INLS 888.
Grading Status: Letter grade.

INLS 890. Advanced Special Topics.  1-6 Credits.
Exploration of an advanced special topic not otherwise covered in the curriculum. Previous offering of these courses does not predict their future availability; new courses may replace these.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 9 total credits. 9 total completions.
Grading Status: Letter grade.

INLS 988. Research in Information and Library Science.  1-6 Credits.
Permission of the instructor. Supports individual and small group research undertaken by doctoral students in information and library science intended to produce research results of publishable quality.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics.
Grading Status: Letter grade.

INLS 992. Master's (Non-Thesis).  3 Credits.
Provides a culminating experience for master's degree students, under the supervision of a faculty member, to engage in: 1) independent research with a final research paper, or 2) a practicum experience with a final presentation or poster.

Rules & Requirements
Requisites: Prerequisites, INLS 781, INLS 778, INLS 779, or permission of instructor.
Repeat Rules: May be repeated for credit.

INLS 994. Doctoral Research and Dissertation.  3 Credits.

Rules & Requirements
Repeat Rules: May be repeated for credit.

CHIP 490. Selected Topics.  1-3 Credits.
Exploration of an introductory-level special topic not otherwise covered in the curriculum. Previous offerings of these courses do not predict their future availability; new courses may replace these.

Rules & Requirements
Repeat Rules: May be repeated for credit. 6 total credits. 6 total completions.
Grading Status: Letter grade.

CHIP 690. Intermediate Selected Topics.  1-3 Credits.
Exploration of a special topic not otherwise covered in the curriculum, at an intermediate level. Previous offering of this course does not predict future availability; new courses may replace these. Topic varies by instructor.

Rules & Requirements
Repeat Rules: May be repeated for credit. 6 total credits. 6 total completions.
Grading Status: Letter grade.

Graduate-level Courses
CHIP 725. Electronic Health Records.  3 Credits.
Focuses on EHR data standards with emphasis on data management requirements, applications, and services. Course includes HL7, CCHIT, and CDISC standards. For data management specialists, administrators, and health data analysts.

Rules & Requirements
Grading Status: Letter grade.

CHIP 770. Health Informatics Seminar.  1 Credits.
This series explores key areas in Health Informatics and includes research results, overview of programs of research, and evaluative projects. Speakers with extensive informatics experiences and knowledge from both academia and industry are invited to present.

Rules & Requirements
Repeat Rules: May be repeated for credit. 6 total credits. 6 total completions.
Grading Status: Letter grade.

CHIP 793. Health Informatics Internship.  1-3 Credits.
The health informatics internship is a course designed to expand classroom learning to include "hands-on" experience with an industry partner in health care or health information technology. The main aim of the course is to provide the students a practical learning opportunity in Health IT deployment, data collection and management, and data analysis.

Rules & Requirements
Requisites: Prerequisite, Student must have completed 9 hours of coursework.
Grading Status: Letter grade.
CHIP 890. Advanced Special Topics. 1-6 Credits.
Exploration of an advanced special topic not otherwise covered in the curriculum. Previous offering of these courses does not predict their future availability; new courses may replace these.

Rules & Requirements
Repeat Rules: May be repeated for credit. 9 total credits. 9 total completions.
Grading Status: Letter grade.

CHIP 994. Doctoral Research and Dissertation. 3 Credits.
Individual work on the doctoral dissertation under the guidance of the student's dissertation advisor. Graduate students must have completed their pillar and elective coursework requirements. A doctoral degree check with program coordinator must be completed before a student can be enrolled in CHIP 994. Doctoral student standing and permission of instructor required.

Rules & Requirements
Repeat Rules: May be repeated for credit.

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