LIBRARY & INFORMATION SCIENCE (LIS)

LIS 4000 Libraries, Information and Society (3 Credits)
The course will examine the major historical, socio-cultural, political, and technological forces that affect the current state and the future of libraries and information organizations. The main focus will be placed on the diversity of library and information professions, professional values and ethics, intellectual freedom, the evolving nature of community engagement in different information contexts, and the organizational structure of different types of libraries and information organizations. The course will also lay the foundation for students' professional development and growth through the program and beyond.

LIS 4001 Immersion (0 Credits)
This on-campus experience is for students in the MLIS@Denver online program.

LIS 4005 Privilege & Equity (3 Credits)
This course is a reflection and discussion-guided exploration of various societal privileges and how they affect equity in library, archives, and other information professions. The topics of race, ethnicity, gender, socio-economic status, and education will be considered.

LIS 4010 Organization of Information (3 Credits)
This course introduces basic concepts in the theoretical, practical, and technological aspects of information organization. It provides an overview of the methodologies for organizing and representing information resources in the library, archives, and museum settings.

LIS 4011 Information Access & Retrieval (3 Credits)
Information retrieval is defined as the process of searching for (and retrieving) relevant information within a document collection. The document collection could be textual (bibliographic records), structured and unstructured data, library databases, web based information resources, multimedia resources, and numerical data. This course introduces students to important access and retrieval tools and technologies used to retrieve information that are relevant to a user's information need. In addition to the underlying principles and processes revolving around access and retrieval such as text operations, indexing, query languages, and searching, the course covers relevant topics such as library discovery systems, web based information retrieval technologies, and enterprise search systems.

LIS 4015 User and Access Services (3 Credits)
Overview of human information processing and user services in the changing information environment and different communities of practice. This course introduces the concepts of user information needs, seeking, and processing as a foundation for understanding users and designing user-centered information services. The course examines both traditional reference and current/emerging information services in different settings and populations. Course also introduces the concepts of information literacy, user education, and assessment of information services.

LIS 4040 Management of Information Organizations (3 Credits)
An introduction to current theory and practice of management in information organizations through the study of organizations, communications, decision making, planning, leadership, human resources and budgeting. Prerequisite: LIS 4000 or instructor approval.

LIS 4043 Advocacy and Marketing in LIS (3 Credits)
An overview of advocacy and marketing foundations as they relate to libraries. The course examines practical tools and applications of both marketing and advocacy. It helps to distinguish the difference between the two disciplines and when the two should be used together.

LIS 4050 Library and Information Technologies (3 Credits)
A foundation course on the applications of information and communications technology in libraries and information agencies. Integrated library systems and the acquisition, evaluation, and implementation of library automation solutions, including electronic resource management systems are explored. The course further introduces database design, Internet technology, web services, cloud computing, computer networks, telecommunications, and computer security. Hardware, software, and other productivity tools and utilities from organizations such as OCLC, Amazon, and Google are discussed.

LIS 4060 Reference (3 Credits)
Information resources include a number of different kinds of reference materials in a wide variety of formats. These include guidebooks, encyclopedias and dictionaries, indexes and abstracts, handbooks, bibliographies, biographical finding tools and biographies, data sets and much more. Many of these resources are available on-line, as well as in print and other digital formats. This course will help students identify and evaluate the most likely resources for information queries in particular settings. It will also provide the opportunity to find answers to real research questions. The course will cover the primary resources for the broad disciplines of business, humanities, sciences, social sciences and government publications in print and electronic formats. Class exercises will reflect the multidisciplinary and multicultural interests and characteristics of library users. Prerequisite: LIS 4015. Recommended prerequisites: LIS 4000 and LIS 4011.

LIS 4070 Cataloging & Classification (3 Credits)
Theory and practice of bibliographic control including the study of representative cataloging using Anglo American Cataloging Rules, 2d ed., rev. with amendments and Library of Congress Rule Interpretations, machine-based representation using the USMARC formats and other standards, and subject analysis and classification using Library of Congress Subject Headings, Dewey Decimal Classification, and Library of Congress Classification, with principle focus on monographs, major media, sound recordings, and serials. Prerequisite: LIS 4010 or instructor approval.

LIS 4135 Scholarly Communication (3 Credits)
This course will provide a broad understanding of scholarly communication systems regarding the creation, dissemination, and evaluation of scientific information. The concept of scholarly communication refers to the ways researchers publish and disseminate their research findings in the digital environment and encompasses formal and informal channels of communication among scholars. Traditionally, scholarly dissemination systems have involved conference presentations and publication of books and articles in subscription-based journals. Digital technology has transformed scholarly communication by introducing open access publishing models and alternative ways of measuring scholarly impact. This course will explore the changing nature of scholarship and will examine the topics of scholarly publishing, peer review, intellectual property, the open access movement, digital repositories, bibliometrics, and altmetrics.

LIS 4206 Web Content Management (3 Credits)
This course will include instruction in web page creation, selection, and evaluation of web content as well as web site management. Selection of web page content will be discussed in the context of organizational knowledge management and competitive intelligence needs. Differences in information needs for provision of public information and competitive intelligence on Internet pages versus the organizational information needs of Intranets in knowledge management will be explored. This course also will address human-computer interface design to allow web page designers to create effective web pages according to established principles of design.

LIS 4208 Usability (3 Credits)
This course provides an overview of usability analysis and user experience research and introduces students to practical methods and techniques in conduction usability evaluation. The focus of the course will be on the selection of appropriate evaluation methods, as well as planning, designing, and conduction usability evaluations of information services. In addition, the course will discuss the methods and tools of user-experience research, the theoretical underpinnings of usability, and the role of usability in iterative design and the development of information systems.

LIS 4209 Information Architecture (3 Credits)
The web is a complex information environment consisting of billions of web pages, users, and clicks and interaction every single day. This course introduces students to the fundamentals of web information architecture (IA) - a discipline that aims to understand the information needs and activities of web visitors and create design elements to help users find their way around in the complex information environment with ease. The course will cover various strategies and skills, in which information architects structure, organize, label, navigate, and search for information on large websites. A service learning component is built into this course so that students can transfer their IA knowledge and skills to a real-world project. The course is designed following a project management approach and students will be exposed to different activities from start to finish.

LIS 4210 Data Visualization (3 Credits)
This course provides a practical introduction to the principles, theories, and applications of information visualization in the research data context. This course contextualizes modern practices in information visualization by examining historical approaches to visualization with an eye on theories that inform contemporary visualization best practices. Using a hands-on component, students will get real-world experience in visualizing datasets, and building visualization dashboards that integrate multiple visualizations.

LIS 4220 Data Curation (3 Credits)
Across the academic domains, digital data are becoming more visible as critical products of scholarly work. Digital technologies, such as sensor networks in the environmental sciences, social networking tools in the social sciences, and the digitization of cultural artifacts in the humanities, allow researchers to produce far greater volumes and complexities of digital data than were possible in the past. Digital technologies, and the data that they produce, offer tremendous opportunity for researchers in every academic discipline to ask questions that were previously impossible to study. Some digital technologies enable researchers to study very local phenomena in great detail. Others enable the integration of many diverse data streams in order to conduct synthesis and longitudinal studies. But while the possibilities of digital data are exciting, they also present tremendous challenges: how to best organize and manage data, how to make data discoverable and accessible to diverse user communities, and how to store and preserve data over the long term.

LIS 4230 Database Management Systems (3 Credits)
This is a foundation course on the principles of database design and the use of database management systems for information professionals. The course covers database systems, data modeling, relational models, relational algebra, SQL, emerging NoSQL systems, data storage and querying, query languages, query optimization, OLAP, transaction management, data warehousing, and data mining. In addition, fundamentals on systems analysis and the database application lifecycle will be reviewed.

LIS 4235 Scripting for Large Databases (4 Credits)
This course will introduce students to the basics of data storage and acquisition as part of a multi-step data gathering, processing, analysis and visualization effort. The logic and structure of relational databases will be reviewed, exploring the more common databases like SQL Server and Postgres. along with exploration of JSON and NoSQL based data stores. Techniques and methods for automation and scalable data processing will be introduced under the Python programming language with a focus on using Pandas and other libraries to simplify data tasks. These skills will be integrated and applied by the student through the use of prepared data sources, along with use of APIs and web scraping technique to acquire data through internet sources.

LIS 4250 AI for Information Extraction and Analysis (4 Credits)
This course introduces students to the fundamentals of artificial intelligence for information extraction, classification, and regression, with a focus on practical applications using large language models and custom neural networks. The course is designed to be accessible to students with a basic understanding of Python and will include hands-on projects, covering topics such as API access, data preprocessing, architecture design, and model training. Special emphasis will be placed on the ethical considerations and practical challenges of using AI in information science.

LIS 4320 Outreach (3 Credits)
Outreach as a library service is evolving at a rapid pace. This course will examine the history, current practice, and future promise of outreach across all kind of library organizational settings. Topics addressed in this course will include competencies for outreach librarianship; practices in outreach services; definition and scope; planning, designing and budgeting for services; environmental scanning, key performance indicators, and barriers; developing and maintaining partnerships.

LIS 4321 Collection Management (3 Credits)
Topics addressed in this course include collection development and access policies, selection methods and practices, collection assessment, preservation and conservation, de-selection, treatment of rare material, manuscripts and archives, U.S. government publications, non-book and digital formats management, juvenile, and other special materials.

LIS 4330 Information Literacy Instruction (3 Credits)
This course provides an introduction to the principles of library instruction and information literacy including a historical overview of their place within the profession. Emphasis is on instruction within an academic setting, but students will learn important educational theories that can be applied to a variety of settings. ACRL and AASL standards will be examined as well as types of instruction, instructional design, collaboration with faculty, various competencies, assessment, and lifelong learning. The class has a strong emphasis on public speaking, communication skills, and the practical application of educational theory.

LIS 4355 The Reading Experience in LIS (3 Credits)
Working with readers has always been a cornerstone of library practice. Traditionally referred to as readers' advisory, reading work has expanded beyond book displays, individual requests for a good read, and book clubs. It has become a foundation of extensive library programming, meaningful leisure, and personal enjoyment, and an instrument of building healthy and engaged communities; it has turned from monolingual to multilingual; and it has claimed its place in the virtual library environment. No longer limited to public libraries, reading work comprises a growing area of interest in academic and special libraries, book publishing, and book trade. This course will introduce students to the selected theories of reading behaviors; practical skills of engaging readers, developing reader services, programming, and advocacy; the major genres and sub-genres of fiction and nonfiction materials; a wide array of print and electronic tools facilitating this practice; electronic reading and online reading communities; and foundations of bibliotherapy. This course is focused on adult readers. For other audiences, see LIS 4510 Children's Materials & Services & LIS 4520 Young Adult Materials & Services.

LIS 4370 Database Searching (2 Credits)
Nearly all historic, traditional search and retrieval tools such as library catalogs, indexes, microform guides, and archival findings aids have migrated to web-based systems. This course explores the complexities of searching for materials in an online environment. Topics to be covered include database and field structures; controlled vocabularies and indexing schema; search syntaxes, reference linking; data exploring and manipulation; non-textual database searching including numerical, image, and multimedia data; metasearch and web-scale discovery technologies.

LIS 4404 Metadata Architectures (3 Credits)
Provides an overview of the principles and theories of metadata development in the digital environment. Focuses on the design and application of metadata schemas for distinct domains and information communities, issues in metadata interoperability, vocabulary control, quality control and evaluation. Examines international standards, activities and projects. Prerequisite: LIS 4010.

LIS 4510 Children's Materials and Services (3 Credits)
This course is designed to prepare librarians to work with children (ages birth to 12 years) in school and public libraries. Topics covered include children's development, reading interests and needs, materials selection, collection development (including print and non-print materials), discussions of specific genres, reading motivation skills, designing a children's area, and developing various programming ideas. Students read/view/listen to and evaluate a wide variety of materials for and about this age group, prepare and present booktalks and stories, become familiar with review sources, and design a one-year plan for youth services in a school or public library.

LIS 4520 Young Adult Materials & Services (3 Credits)
This course prepares librarians to work with young adults (ages 12-18) in school and public libraries. Topics covered include young adult development, reading interests and needs, materials selection, collection development (including print and non-print materials), and discussions of specific genres, reading motivation skills, designing a YA area, programming, and intellectual freedom issues. Participants will read/view/listen to and evaluate a wide variety of materials for and about this age group, prepare and present booktalks, become familiar with review sources, and design a one-year plan for a YA department in a small school or public library.

LIS 4610 Career Development (3 Credits)
This course addresses issues in career planning and professional development. Key skills that graduate professional students build are: using self-assessment and reflection to understand existing skills and expertise; identifying the expectations of the LAIS profession; acquiring skills related to finding a professional position; and, developing a career plan.

LIS 4700 Topics in LIS (1-5 Credits)
This flexible library and information science course will provide students with the opportunity to explore issues of current importance in the field. Topics and credit hours will vary and will address subjects such as emerging technologies, new methodologies, specific reader services, standards and practices, and social and economic trends in the profession. Prerequisite courses may be recommended or required as determined by the content of the specified course.

LIS 4701 Reference Topics (1 Credit)
This course provides the student with an opportunity to explore information resources in specific subject materials. Lecture, readings, class discussions, and exercises will address all formats of materials including print, electronic, and web resources.

LIS 4702 Type of Library: Topics (1-3 Credits)
This course is a study of specific types of libraries, such as public libraries, academic libraries, and special libraries, and the characteristics that make them different from other types of libraries. Specific topics covered will depend on the type of library, but may include collections, management, budgets and funding, as well as professional competencies.

LIS 4800 Introduction to Archives (3 Credits)
This course provides an introduction to the objectives and methods of the archival and records management professions including an overview of terminology, issues, and common practices. The systematic control of records throughout their life cycle from creation through processing, distribution, organization, retrieval and archival disposition will be covered. Prerequisites: LIS 4000 and LIS 4010; or instructor permission.

LIS 4805 Records Management (3 Credits)
This course covers the establishment of information maintenance plans, evaluations and audits of records and information management Programs, the records and information survey, retention policies and legal requirements, and techniques for integrating automation to records and information management.

LIS 4806 Advanced Archives (3 Credits)
In this course, students will be given the opportunity to put into practice basic archival principles and functions. Students will perform the actions of appraisal, accessioning, arrangement, description, and access solution review for both analog and digital archival collections. Additionally, students will be given the task of providing solutions for new paradigms in archival processing such as creating a web archive, processing email collections, and capturing social media content. The course will be a combination of lecture, demonstration, lab time, discussion, and projects.

LIS 4810 Digital Libraries (3 Credits)
This course provides a theoretical foundation for the study of digital libraries and discusses the technological, organizational, social, and legal issues associated with the development and use of digital libraries. Through this course students develop an understanding of digital library components and explore theoretical and practical approaches to constructing, maintaining, and evaluating digital libraries. Topics examined include digital library definitions, design and architecture of digital libraries. Topics examined include digital library definitions, design and architecture of digital libraries, information access in the digital library environment, digital library users and user services, data repositories, digital curation, digital preservation, digital library evaluation, and digital librarianship.

LIS 4820 Digitization (3 Credits)
The course offers an introduction to issues and trends in planning, developing and managing digitization projects at libraries, archives, and museums. The focus of the course is on the conversion process of analog materials into the digital format, online delivery, and preservation of master files. The course discusses collection development policy for digital projects, copyright, digital imaging technology, digitization standards and best practices for text, images, audio, and video, metadata for cultural heritage collections, delivery platforms, preservation, project management, sustainability, documentation, promotion, and evaluation of digital projects.

LIS 4850 Digital Preservation (3 Credits)
Students will learn the principles and practices of preserving access to information encoded in digital form. They will learn how to assess digital preservation needs within an institution, write digital preservation policies, and how to collect and present data to make a case for acquiring funds for digital preservation activities. Students will learn the basics of digital information encoding as it applies to the technological aspects of digital preservation, and will learn about current tools and practices used to preserve access to digitally encoded information over time. The course will be a combination of lecture, discussion, and problem solving. It requires participants to conduct independent research and writing. Critical reading of course materials is essential to stimulate active participation in class discussions.

LIS 4900 LIS Research (3 Credits)
The Library and Information Science Research course examines types of studies and methodologies relevant to research in the library and information science field, focusing on research methods applicable to academic library work. Upon completion of the course, students will be able to interpret and evaluate existing research, apply research to the analysis of professional concerns, develop a research agenda, describe how empirical research advances the knowledge and practice of library and information science, and design a research study.

LIS 4901 Capstone Course (3 Credits)
Students in this course will design and complete a project to demonstrate the ability to integrate and synthesize their master's course work and apply their knowledge to a topic. The class meets with an instructor regularly over the nine-week summer quarter. The instructor monitors and guides the students to ensure that they complete the phases of the project in accordance with the proposed timeline and goals. Evaluation will be based on individual performance, with respect to the quality and professionalism of the research, the management of the project, and analytical and writing skills. Prerequisite: Minimum of 45 quarter hours of graduate LIS course work completed, including all core courses, a proposal approved by the academic advisor and faculty permission.

LIS 4902 Internship (1-4 Credits)
This course will offer up to 4 credits for an internship position in libraries and archives. Students are encouraged to gain practical experience.

LIS 4910 Culminating Internship (3 Credits)
This course is designed to supplement the classroom experience by giving students practical experience working in a library or information agency. Various options are available to students depending on their areas of interest and specialization. Opportunities for experience include fields of medicine, law, art, public, and academic libraries. It is the student's responsibility to select a practicum site and a field supervisor, who must be approved by LIS faculty. Seventy-five hours of service over a 10-week quarter are required. The student, faculty, and field supervisor will determine specific requirements for the final paper or report. Students must notify the LIS academic advisor one quarter before enrolling in Culminating Internship. Prerequisites: Completion of a minimum of 38 quarter hours of graduate LIS coursework, including all core courses.

LIS 4920 Service Learning in LIS (1-4 Credits)
This course is designed to supplement the classroom experience by giving students an opportunity to participate in a service learning project. Students will propose an independent study component highlighting the learning aspects of the project. The experience should provide practical work in a library or information agency. Various options are available to students depending on their areas of interest and specialization. Opportunities for experience include many areas related to the information needs of an underserved population. It is the students responsibility to select a site and a field supervisor. The student, faculty coordinator, and field supervisor will work together to establish the goals and objectives of the experience. A minimum of 40 hours of service is required for two quarter hours of credit.

LIS 4991 MA Independent Study (1-10 Credits)
Independent study projects allow students more in-depth investigation of the many facets of library and information science. Students must work with an approved faculty advisor and submit a proposal outlining the objectives, scope, outcomes, and evaluation criteria. The faculty advisor and the department director must approve proposals. Prerequisites: Completion of a minimum of 30 quarter hours of graduate LIS coursework, including all core courses and a minimum GPA of 3.0.

LIS 4995 Independent Research (1-10 Credits)