

# Information Science and Learning Technologies

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The PhD in Information Science and Learning Technologies prepares doctoral students for careers as researchers at the intersection of information and technology. As a doctoral student in the School of Information Science & Learning Technologies, you can follow interdisciplinary paths. Approaches to inquiry include technical, cognitive, epistemological, cultural, political, and economic aspects of informing and learning. Interest areas include:

- Engineering education
- Educational gaming and simulation
- Information organization, access, and dissemination
- Information seeking and use
- Interactive learning environments including VR, embodied and augmented learning
- Learner-centered design, interface design, instructional design
- Libraries, archives, museums, and other cultural heritage institutions
- Reading, gaming, and other immersive experiences
- User eXperience (UX) and Human computer interaction (HCI)

The completion of the program will prepare you for career tracks in higher education, public policy, public and private research in various fields including but not limited to interaction design, instructional design, and library and information science. The PhD can be completed either in-person or, in cooperation with your advisor and program of study committee, entirely online.

For questions, please contact the School of Information Science & Learning Technologies (the iSchool at the University of Missouri)  
304 Townsend Hall  
Columbia, MO 65211  
Toll free phone: 877-747-5868  
phone: 573-884-1391  
email: [sislt@missouri.edu](mailto:sisl@missouri.edu)  
website: <https://education.missouri.edu/information-science-learning-technologies/>

## Faculty

**Professor** D. Adkins\*\*, R. Marra\*\*, J. Moore\*\*

**Associate Professor** J. Bossaller\*\*, S. Buchanan\*\*, H. Moulaison-Sandy\*\*

**Assistant Professor** H. Cho\*\*, N. Glaser\*\*, D. Oprean\*\*, X. Xu\*\*

**Teaching Professor** J. Howland\*

**Associate Teaching Professor** B. Brendler\*\*, C. Dudenhoffer\*

**Assistant Teaching Professor** J. Alston\*

**Professor Emeriti** J. M. Budd, J. Caplow, S. Erdelez\*, G. Fitzgerald, T. R. Kochtanek, J. Laffey\*\*

\* Graduate Faculty Member - membership is required to teach graduate-level courses, chair master's thesis committees, and serve on doctoral examination and dissertation committees.

\*\* Doctoral Faculty Member - membership is required to chair doctoral examination or dissertation committees. Graduate faculty membership is a prerequisite for Doctoral faculty membership.

## Undergraduate

The degree in information science and learning technologies is only at the PhD level. The University does offer baccalaureate opportunities in a number of related areas, both within the College of Education (specifically, the Bachelor of Educational Studies (<http://catalog.missouri.edu/collegeofeducation/educationalstudies/bes-educational-studies/>)), and in the other Schools and Colleges that make up the University. The catalog provides a complete list of these degree options (<http://catalog.missouri.edu/degreesanddegreeprograms/>).

## Graduate

- PhD in Information Science and Learning Technologies (<http://catalog.missouri.edu/collegeofeducation/information-science-learning-technologies/phd-information-science-learning-technologies/>)

## About the PhD in Information Science & Learning Technologies

In January 1997, the School of Information Science & Learning Technologies (SISLT) became the home for MU's graduate programs in Library and Information Science and Educational Technologies as well as a new, interdisciplinary doctoral program in Information Science & Learning Technologies. For an historical look at SISLT theses and dissertations, consult the digital archive in MOspace: <https://mospace.umsystem.edu/xmlui/handle/10355/5240/>

SISLT is a proud member of the iSchools (<https://ischools.org/>), an international group of information schools in institutions of higher education dedicated to advancing the information field.

For more information, contact:

SISLT Student Services, 304 Townsend Hall  
573-884-1391 or toll free 877-747-5868  
<https://education.missouri.edu/information-science-learning-technologies/>

**IS\_LT 2222: Information Management and the Successful Scholar**  
This course will help students determine what information is needed for a project; access and critically evaluate information in the library and the internet; understand intellectual property, develop skills for lifelong learning, and learn to use a variety of technological tools that can help them succeed in college. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 2467: Inquiry into Empowering Learners with Technology**  
This course examines models and strategies for integrating technology into the teaching and learning process, with a focus on transformative, meaningful learning instead of passive technology use. Topics include digital citizenship, professional online presence, and designing and facilitating learning with technology. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** Consent required (students must be admitted to College of Education's Teacher Education program)

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**IS\_LT 3450: Introduction to Research in Educational Settings**  
(same as ED\_LPA 3450). This course provides an introduction to quantitative, qualitative, and mixed methods research, with an emphasis on how various forms of data collection and prior research can inform and improve practice. Students will: (1) develop skills in locating research

relevant to their professional interests; (2) understand multiple forms of data collection strategies; and (3) identify ethical considerations associated with research. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 4099: Making and Education (3D printing)**

(cross-leveled with IS\_LT 7099). This course - via hands-on activities and projects - will immerse you into the making and 3D printing culture. You will learn how to design and redesign 3D objects, learn 3D modeling software 3D printing. You will learn how to teach STEM concepts through 3D modeling and 3D printing.

**Credit Hour:** 1-3

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**IS\_LT 4308: Game Engine Skills**

(cross-leveled with IS\_LT 7308) This course - via hands-on activities and projects - will immerse you into learning to use the basic functionalities of a Game Engine (e.g. Unity or Unreal). This is a skills course. You will learn to use the game engine so you can prototype games on your own. Graded on A-F basis only.

**Credit Hours:** 2

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**IS\_LT 4310: Seminar in Information Science and Learning Technologies**

Discussion and critical study of current developments in the field of information science and learning technologies.

**Credit Hour:** 1-3

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**IS\_LT 4355: Web Design and Development**

(cross-leveled with IS\_LT 7355). Learn how to make websites or customize existing ones using HTML5 and CSS3 (cascading style sheets). This course teaches you how to set-up, design and create a website, learn design principles of text, color, media, and how to design web sites for different layouts. You will develop a fully functional website ready to use or one ready for more advanced web languages to be integrated. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 4356: Interactive Web Design**

(cross-leveled with IS\_LT 7356). Attain skills in designing/developing interactive web sites/applications using JavaScript, JavaScript libraries, AJAX, plugins, widgets, Bootstrap, and user interface themes. Add effects, animations to photo galleries, slide shows, carousels to support instruction. Embed dynamic data visualizations using multiple open sources and modify web pages based on user actions to fit interactive instructional needs. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** IS\_LT 4355

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**IS\_LT 4361: Introduction to Digital Media**

(cross-leveled with IS\_LT 7361). Hands-on approach to multimedia production techniques. Develops understanding of technical and conceptual tools for the basics of digital media, video editing, still image and audio file manipulation. Students create web portfolio to present their digital products. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 4373: Exploring Moodle**

(cross-leveled with IS\_LT 7373). This course will prepare students to work within the Moodle Learning Management System (LMS) to set up and manage an online course. Students in the course will investigate and manipulate components of Moodle from an instructor's perspective. Graded on A-F basis only.

**Credit Hour:** 1

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**IS\_LT 4374: Exploring Canvas**

(cross-leveled with IS\_LT 7374). This course will prepare students to work within the Canvas Learning Management System (LMS) to set up and manage an online course. Students will investigate and manipulate components of Canvas from an instructor's perspective. Graded on A-F basis only.

**Credit Hour:** 1

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**IS\_LT 4375: Mobile Web App Development**

(cross-leveled with IS\_LT 7375). The purpose of this course is to provide students with knowledge necessary to create a mobile app with basic functions using HTML 5, JavaScript, and CSS3. Through this course, students will obtain knowledge of mobile web app development including both design and development phases. Upon the completion of this course, students will produce a mobile web app that can be operated via a mobile device. Graded on A-F basis only. Recommended: Students must be able to hand code: html, Styling and positioning web pages using CSS & JavaScript, and JavaScript basic functions.

**Credit Hours:** 3

**Prerequisites:** IS\_LT 4370 or permission of instructor

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**IS\_LT 4383: Rapid Development Tools for Online Learning**

(cross-leveled with IS\_LT 7383). Students will apply principles of rapid development and use rapid development tools to create a prototype of an e-learning module that uses technology features that can enhance learning (e.g. learner interactions). Specific competencies include: Storyboard and "rapidly" develop an e-learning module using software designed to support this process; Use software tools that develop specific elements of e-learning (e.g. video, animation, gaming), and incorporate those elements into an e-learning module; Evaluate rapidly developed e-learning products; Compare and contrast features of rapid development software packages. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 4384: Designing Games for Learning**

(cross-leveled with IS\_LT 7384). Learn why games can be useful in learning and how to design them. Play some exemplary games that will help you understand the mechanics of game design and work incrementally towards designing and developing your own educational game prototype via game modifications ("mods"), engaging in gaming communities, evaluating existing games, building learning plans using games and learning the basics of a simple gaming shell language. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** Junior or senior standing required

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**IS\_LT 4385: Designing Games for Learning II**

Learn to apply knowledge of serious game design to a real-world problem within the learning community. Acknowledge and identify the differences in educational games and simulations by playing and researching actual educational games and simulations. Work with a real client to incrementally design either a game or simulation with a working prototype to pitch to Adroit Studios gaming lab. Gain experience with gaming and simulation engines and understand how game development aligns with game design. Test the designed prototype idea to evaluate the success of learning. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** IS\_LT 4384, instructor's consent

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**IS\_LT 4386: Microlearning**

(cross-leveled with IS\_LT 7386). Microlearning involves just-in-time delivery of small, targeted "nuggets" of specific content. This course introduces basic concepts, process, strategies, and resources for designing microlearning experiences. Students utilize step-by-step guides and instruction to create a microlearning project. Graded on A-F basis only.

**Credit Hour:** 1

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**IS\_LT 4387: Agile Project Management**

(cross-leveled with IS\_LT 7387). This course will provide you with a hands-on opportunity to practice as a team member and leader applying agile project management life cycle phases using a method such as Scrum. Agile is a philosophy in the development system that grew out of the software industry. Graded on A-F basis only.

**Credit Hour:** 1

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**IS\_LT 4473: Introduction to Project Management**

Knowledge and tools for major phases of project management life cycle: project initiation, planning, execution, and closure. Integrated online discussions focus on application and resources. Includes discussions of Lean Project Management techniques and the role of Project Managers. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 4500: Educational Studies Game Design Senior Capstone**

In this culminating course for the Bachelor of Educational Studies degree, emphasis in Educational Games and Simulation Design, students design and prototype a simple educational game or simulation, or a significant component of a larger educational game or simulation design. Once developed, you must conduct play-tests. The Capstone is used as the culminating assessment at the end of the program of study. Graded on S/U basis only.

**Credit Hours:** 3

**Prerequisites:** Instructor consent. Must be taken during last semester of student's program

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**IS\_LT 4888: Intro to VR-enabled Instructional Design**

(cross-leveled with IS\_LT 7888). This course concentrates on establishing your own virtual reality instructional environment applying instructional design theories and hands-on technical skills including 3D modeling and simple scripting in VR. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 7099: Making and Education**

(cross-leveled with IS\_LT 4099). This course discusses the importance of making and creative, participatory culture in educational environments. Students will learn about making and participatory creative culture, with an emphasis on inclusive STEAM experiences, while using virtual creative tools. Experience how these ideas can enhance your own personal education, while building practical skills in design thinking and project management. This course includes experience creating digital learning spaces and projects, builds 21st century career skills, and provides a chance to design and prototype educational manipulatives and aids. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 7301: Introduction to Information Technology**

The nature of information and information transfer in the institutional setting; covers the culture of information in society, standards for information processing and transfer, and networking in communications perspectives of information providing agencies.

**Credit Hours:** 3

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**IS\_LT 7302: Organization of Information**

In order to retrieve and use information, that information must first be organized. This course investigates systems and structures for organizing information in a variety of contexts.

**Credit Hours:** 3

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**IS\_LT 7305: Foundations of Library and Information Science**

An introduction to the background, contexts, organizations, issues, ethics, values, and terms of information science, the information professions, and the library as an idea, space, institution, and repository of the cultural record.

**Credit Hours:** 3

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**IS\_LT 7306: School Library Early Field Experience**

30-50 clock hours of early field experience in K-12 school libraries. Students will observe an experienced school librarian and have limited interactions with students. Emphasis to include professional library skills in program management and administration (e.g., managing collections and technology) and working with the school community. Graded on S/U basis only.

**Credit Hour:** 1

**Prerequisites:** Instructor permission and enrollment in the school library media specialist emphasis area

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**IS\_LT 7307: School Library Mid-Level Field Experience**

45-60 clock hours of mid-level field experience in K-12 school libraries. Students will observe an experienced school librarian and have structured interactions with students. Emphasis to include professional library skills in information and knowledge (e.g., preparing and leading instruction, classroom management) and teaching for learning (e.g., collaborating with the school community). Graded on S/U basis only.

**Credit Hour:** 1

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**Prerequisites:** Instructor permission and enrollment in the school library media specialist emphasis area. Enrollment in or successful completion of IS\_LT 7306

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**IS\_LT 7308: Game Engine Skills**

(cross-leveled with IS\_LT 4308). This course - via hands-on activities and projects - will immerse you into learning to use the basic functionalities of a Game Engine (e.g. Unity or Unreal). This is a skills course. You will learn to use the game engine so you can prototype games on your own. Graded on A-F basis only.

**Credit Hours:** 2

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**IS\_LT 7310: Seminar in Information Science and Learning Technology**

Discussion and critical study of current developments in the field of information science and learning technologies.

**Credit Hour:** 1-3

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**IS\_LT 7312: Principles of Cataloging and Classification**

Theory and practice of cataloging and classification of library materials using current standards and tools. Principles, developments, and trends in cataloging and access to library data.

**Credit Hours:** 3

**Prerequisites:** IS\_LT 7305

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**IS\_LT 7313: Collection and Access Management**

Selection of materials for libraries and information agencies, policies for collection management, freedom and diversity of information, access to information and evaluation of collections and access.

**Credit Hours:** 3

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**IS\_LT 7314: Reference Sources and Services**

Principles, developments and trends in reference services, reference service organization, and general and specialized print and online sources. Overview of information needs and searching. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 7315: Management of Information Agencies**

Concepts of management applied to libraries and information systems; management tools, programming, models and simulation in an environment of an information producing or disseminating agency.

**Credit Hours:** 3

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**IS\_LT 7320: Emerging Technologies in Libraries**

Critically examines web technologies, devices, and methods used to access collections and services, promote social interaction, and facilitate communication. Focuses on new and emerging software, resources, and communication methods including their discovery and implementation. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 7355: Web Design and Development**

(cross-leveled with IS\_LT 4355). Learn how to make websites or customize existing ones using HTML5 and CSS3 (cascading style sheets). This course teaches you how to set-up, design and create a website, learn design principles of text, color, media, and how to design web sites for different layouts. You will develop a fully functional website ready to use or one ready for more advanced web languages to be integrated. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 7356: Interactive Web Design**

(cross-leveled with IS\_LT 4356). Attain skills in designing/developing interactive web sites/applications using JavaScript, JavaScript libraries, AJAX, plugins, widgets, Bootstrap, and user interface themes. Add effects, animations to photo galleries, slide shows, carousels to support instruction. Embed dynamic data visualizations using multiple open sources and modify web pages based on user actions to fit interactive instructional needs. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** IS\_LT 4355 or IS\_LT 7355

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**IS\_LT 7361: Introduction to Digital Media**

(cross-leveled with IS\_LT 4361). Hands-on approach to multimedia production techniques. Develops understanding of technical and conceptual tools for the basics of digital media, video editing, still image and audio file manipulation. Students create web portfolio to present their digital products. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 7366: Technology Leadership**

Develop skills, knowledge, and values needed to provide leadership in schools. Analyzes characteristics of effective leaders, focusing on staff development. Explores technology and school reform, technology integration, and current issues. Online. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 7373: Exploring Moodle**

(cross-leveled with IS\_LT 4373). This course will prepare you to work within the Moodle Learning Management System (LMS) to set up and manage an online course. As a student in this course, you will investigate and manipulate components of Moodle from an instructor's perspective. Graded on A-F basis only.

**Credit Hour:** 1

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**IS\_LT 7374: Exploring Canvas**

(cross-leveled with IS\_LT 4374). This course will prepare students to work within the Canvas Learning Management System (LMS) to set up and manage an online course. Students will investigate and manipulate components of Canvas from an instructor's perspective. Graded on A-F basis only.

**Credit Hour:** 1

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**IS\_LT 7375: Mobile Web App Development**

(cross-leveled with IS\_LT 4375). The purpose of this course is to provide students with knowledge necessary to create a mobile app with basic

functions using HTML 5, JavaScript, and CSS3. Through this course, students will obtain knowledge of mobile web app development including both design and development phases. Upon the completion of this course, students will produce a mobile web app that can be operated via a mobile device. Graded on A-F basis only. Recommended: Students must be able to hand code: html, Styling and positioning web pages using CSS & JavaScript, and JavaScript basic functions.

**Credit Hours:** 3

**Prerequisites:** IS\_LT 4370 or IS\_LT 7370 or permission of instructor

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#### **IS\_LT 7378: Electronic Portfolio Development**

This course provides an overview of electronic portfolio development. Students will select, categorize and document their accomplishments in the Technology in Schools emphasis area for review and assessment. Students will demonstrate mastery of the ISTE Standards and commitment to ongoing learning. Web development skills are required. Graded on A-F basis only.

**Credit Hour:** 1

**Prerequisites:** Restricted to students admitted into the Technology in Schools emphasis

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#### **IS\_LT 7380: School Library Practicum**

Directed, project-based experience in school libraries. Graded on S/U basis only.

**Credit Hour:** 1-3

**Prerequisites:** admission to MA, initial certification or 24 completed LIS credit hours taken at MU; instructor's consent

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#### **IS\_LT 7381: Practicum in Information Agencies**

Provides a supervised work experience for master's degree students in a public, academic, or special library. Graded on S/U basis only.

**Credit Hour:** 2-3

**Prerequisites:** IS\_LT 7301, IS\_LT 7302 or IS\_LT 7312, IS\_LT 7314, IS\_LT 7315

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#### **IS\_LT 7383: Rapid Development Tools for Online Learning**

(cross-leveled with IS\_LT 4383). Students will apply principles of rapid development and use rapid development tools to create a prototype of an e-learning module that uses technology features that can enhance learning (e.g. learner interactions). Specific competencies include: Storyboard and "rapidly" develop an e-learning module using software designed to support this process; Use software tools that develop specific elements of e-learning (e.g. video, animation, gaming), and incorporate those elements into an e-learning module; Evaluate rapidly developed e-learning products; Compare and contrast features of rapid development software packages. Graded on A-F basis only.

**Credit Hours:** 3

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#### **IS\_LT 7384: Designing Games for Learning**

(cross-leveled with IS\_LT 4384). Learn why games can be useful in learning and how to design them. Play some exemplary games that will help you understand the mechanics of game design and work incrementally towards designing and developing your own educational game prototype via game modifications ("mods"), engaging in gaming communities, evaluating existing games, building learning plans using

games and learning the basics of a simple gaming shell language. Graded on A-F basis only.

**Credit Hours:** 3

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#### **IS\_LT 7386: Microlearning**

(cross-leveled with IS\_LT 4386). Microlearning involves just-in-time delivery of small, targeted "nuggets" of specific content. This course introduces basic concepts, process, strategies, and resources for designing microlearning experiences. Students utilize step-by-step guides and instruction to create a microlearning project. Graded on A-F basis only.

**Credit Hour:** 1

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#### **IS\_LT 7888: Intro to VR-enabled Instructional Design**

(cross-leveled with IS\_LT 4888). This course concentrates on establishing your own virtual reality instructional environment applying instructional design theories and hands-on technical skills including 3D modeling and simple scripting in VR. Graded on A-F basis only.

**Credit Hours:** 3

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#### **IS\_LT 9012: Public Library Community Partnerships**

This is a service learning course. Students will have the opportunity to work with local community leaders on a project. Students will learn about partnerships and advocacy for the library, developing leadership skills through action and reflection.

**Credit Hours:** 3

**Prerequisites:** IS\_LT 7305 and IS\_LT 9444

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#### **IS\_LT 9013: Public Library Administration**

This class covers three main components: planning, human resources, and budgeting, focusing on public libraries.

**Credit Hours:** 3

**Prerequisites:** IS\_LT 7305

**Recommended:** IS\_LT 9444

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#### **IS\_LT 9014: Budgeting in Libraries**

Budgeting in Libraries covers topics including basic budgeting principles, the legal context, sources of income, standards, developing budgets, types of budgets, fund accounting, cost concepts, cash and accrual methods, internal controls and communication. Graded on A-F basis only.

**Credit Hours:** 3

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#### **IS\_LT 9085: Problems in Information Science and Learning Technology**

Independent, directed study on a topic in the areas of information science and learning technologies.

**Credit Hour:** 1-99

**Prerequisites:** departmental consent

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#### **IS\_LT 9090: Research in Information Science and Learning Technologies**

Dissertation research. Graded on S/U basis only.

**Credit Hour:** 1-99

**Prerequisites:** Doctoral Committee Chair's consent

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**IS\_LT 9334: Library Information Systems**

Focuses on the automated library systems marketplace. Covers integrated online library systems from the systems, functional and user perspective. Includes management approaches for procurement and operation of such systems. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** IS\_LT 7302 or IS\_LT 7312, and IS\_LT 7301 or IS\_LT 7320

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**IS\_LT 9403: Gender Construction in Children's/Adolescent Literature and Media**

This course will cover some of the theoretical concepts about the construction of gender in our culture and how that construction is enabled by literature and media for children and adolescents. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9404: School Library Administration**

Emphasizes school library administration: program development, implementation, evaluation; planning cycle; budget process; services for diverse school constituencies. Effects of national, state, district guidelines, standards and policies on library media programs.

**Credit Hours:** 3

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**IS\_LT 9405: Sociocultural Aspects of Literacy**

This course will cover sociocultural and social constructionist theory as they relate to literacy. Sociocultural theory, in terms of literacy, looks at how both social elements and cultural elements interact to impact literacy behaviors and outcomes. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9406: Curriculum and the School Library**

Focuses on the library media specialist as teacher and instructional partner. Emphasizes negotiating instructional partnerships, integrating information problem-solving models into the curriculum, curriculum mapping, and resource-based learning models.

**Credit Hours:** 3

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**IS\_LT 9407: Intellectual Freedom and Its Discontents**

The course examines principles and contradictions of intellectual freedom and their relation to librarianship. The nature of free speech, the First Amendment, sources of censorship, and professional disputes about intellectual freedom practice in libraries will be important topics.

**Credit Hours:** 3

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**IS\_LT 9408: Information Policy**

Examination of the roles of private and public sectors in information policy formation. Includes consideration of social, economic, political and technological issues.

**Credit Hours:** 3

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**IS\_LT 9409: Seminar in Digital Libraries**

This course is a project-based learning environment that combines Instructor-prepared content, group-based student projects, and threaded asynchronous discussions on selected topics relating to the design, development, and implementation of practical digital libraries. Research directives within the broad domain of digital library development are also covered. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** IS\_LT 7301, IS\_LT 7305, IS\_LT 7302/IS\_LT 7312

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**IS\_LT 9410: Seminar in Information Science and Learning Technology**

Discussion and critical study of current developments in information science and learning technologies.

**Credit Hour:** 1-3

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**IS\_LT 9411: Doctoral Seminar in Information Science and Learning Technologies**

Discussion and critical study of current developments in information science and learning technologies. Graded on A-F basis only.

**Credit Hour:** 1-3

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**IS\_LT 9413: Electronic Resource Management**

This course explores electronic resources (primarily subscription journals and databases) in terms of products, pricing, in-house management of resources, both technical and organizational, licensing, configuring databases and organizing websites for the end user, statistical reporting, and future trends.

**Credit Hours:** 3

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**IS\_LT 9416: Health and Medical Information and Services in Libraries**

This class explores health information, services, and programs in all types of libraries and covers trending and relevant topics in the health and medical fields using articles, recordings, and other resources and hands-on assignments to demonstrate how health and medical information plays a role in librarianship. Graded on A/F basis only

**Credit Hours:** 3

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**IS\_LT 9417: Action Research**

Study of concepts associated with action research; and the processes and procedures for conducting action research. Culminating project is the development of an action research project.

**Credit Hours:** 3

**Prerequisites:** 12 credit hours completed prior to enrolling

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**IS\_LT 9419: American Library History**

Students in this course will learn about the history of libraries in America, reading about and analyzing the political, cultural, and social roles of particular libraries and the library as an institution. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9420: Scholarly Communication**

Exploration of the production and communication of information and knowledge in the disciplines.

**Credit Hours:** 3

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**IS\_LT 9421: Usability of Information Systems and Services**

Introduction to concepts and methods of usability testing and research and user-centered design strategy. Course takes a process approach to define target audiences and usability problems, create and administer investigative procedures, analyze results, and report findings effectively. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9423: Ethics, Data, and Information**

Critical inquiry into perennial and emerging issues in the ethics of data and information.

**Credit Hour:** 1-3

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**IS\_LT 9426: Diversity in the Information Professions**

Leadership to promote employment, organizational, collection and program diversity within libraries and information agencies in the U.S. This course includes management and diversity theories, discussions of workplace climate, and discussions of discrimination and hostility issues. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9427: The Information Society**

This class critically examines the control, dissemination, and effects of information on the modern world. We will study the complex relationship between information and society, looking at how each is a reflection and shaper of the other. The relationship of libraries and other information agencies to the state, and the role of information professionals in the political and cultural spheres are central themes in the course. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9428: History of Books and Media**

Examines the history and philosophy of books and media from the beginnings of writing to the Internet, emphasizing the effects of changes in communication and information technologies. The focus is on the social, cultural, intellectual, scientific, and religious impacts of shifts in the media for preserving and transmitting information. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9429: Metadata**

The contacts in your phone, the embedded GPS information in the photo you took on vacation, and the information that allows you to track down an article in a database are all metadata. Today more than ever, metadata is at the heart of what information professionals do as we organize, teach about, search for, and analyze information. This class explores a variety of kinds of metadata, and the tools and systems for working with it, from the point of view of the information professional. Graded on A-F basis only.

**Credit Hours:** 3

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**Prerequisites:** IS\_LT 7302 or IS\_LT 7312

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**IS\_LT 9431: Children's Library Materials**

Evaluation and selection of materials for children birth-age 13 (Grade 6). Early literacy, emergent readers, reader response theory; social, cultural contexts of readers and reading, trends in publishing.

**Credit Hours:** 3

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**IS\_LT 9433: Youth Services in Libraries**

Examines physical, mental, and emotional development of youth birth through high school. Emphasis on community analysis, outreach services, program design and techniques. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9434: Teen Library Materials**

Evaluation, selection of print, alternate formats for teens, 13-18 (Grades 7-12). Personal, social, popular culture contexts of teen readers and texts; emphasizes reader response; challenges common assumptions about teens and reading.

**Credit Hours:** 3

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**IS\_LT 9435: Adult Services in Libraries**

Library services to adults, including special populations. Emphasis on information needs of adults, organization and management of adult services.

**Credit Hours:** 3

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**IS\_LT 9437: Reader Advisory Services**

Examination of value and role of leisure reading and leisure reading materials. Coverage of reader advisory techniques, support processes, and resources for providing reader advisory services to various audiences. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9438: Marketing and Libraries**

This course provides an introduction to marketing - concepts, planning, strategies and evaluation - as related to libraries and information agencies. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9439: Digital Humanities and Information**

This course on history, philosophy, and methods in the emerging field of 'digital humanities' focuses on topics at the nexus of information, the humanities disciplines, technology, and culture, as well as the contexts of the academy, libraries/archives, museums, and media. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9443: The Academic Library**

Development, objectives, organization and structure, nature of the collections and responsibility for their development, philosophy of library services, measurement and standards of library effectiveness.

**Credit Hours:** 3

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**IS\_LT 9444: The Public Library**

An overview of public library history, missions, and societal roles. Includes public library funding, organization, and management.

**Credit Hours:** 3

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**IS\_LT 9445: Special Libraries and Information Centers**

Introduction to the organization, management, collections, services, challenges and terminology of special libraries and information centers. Addresses the goals and competencies of special librarianship including information provision and functions as performed in special information centers. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9446: International and Comparative Librarianship**

International libraries, intercultural information concerns, how information agencies differ between nations and global information issues. Course presents various countries, their information infrastructures and the influence of information and communication technologies.

**Credit Hours:** 3

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**IS\_LT 9447: Human Centered Design**

Provides an overview of iterative design and project management methodologies that develop solutions to interactive systems and tools. Students will learn how to implement rapid prototyping and evaluation techniques by focusing on the user and task needs, along with human factors. The methods and techniques in this course will enhance understanding of task performance, user satisfaction, and design research. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9448: International Libraries in Context**

Study Abroad course. Visit and study international libraries and related institutions. Covers the political, cultural, social, and economic context in which they operate.

**Credit Hours:** 3

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**IS\_LT 9449: Services for Business Communities and Entrepreneurs**

The course covers the introduction to and application of basic concepts of business information in academic, public and special library environments, and the information searching techniques used for specific business information needs (finding company information, industry information, investment information, statistical information, marketing information, etc.) Course includes service to entrepreneurs. Content covers company, investment, industry, statistical and marketing information and includes use of GIS systems.

**Credit Hours:** 3

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**IS\_LT 9450: Research Methods in Information Science and Learning Technologies**

Research methods and ethics of research in the social sciences, focusing on the information professions and learning technologies.

**Credit Hours:** 3

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**IS\_LT 9452: Information Literacy Instruction**

This course is designed to prepare Library Science students/Information professionals for the variety of teaching situations they will encounter in library and information agency settings. Students will consider learning theory applicable to library instruction, learning styles, teaching methods, and appropriate evaluation of library instruction. Students will also learn strategies for incorporating library instruction into the institutional curriculum. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9453: Planning and Evaluation of Information Services**

The course focuses on the complexity of the planning process in libraries and other information agencies, including the influence of external environments (upper administrations, user communities, information producers) on planning. Internal elements of the organization (staffing, services, finances) are discussed, as are external elements (requirements of a parent organization, legal constraints, etc.). The role of evaluation of personnel, budgets, facilities, access to information, and services is integrated into the process of providing service.

**Credit Hours:** 3

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**IS\_LT 9454: Copyright in Libraries**

An introductory and practical course covering the foundations of copyright, fair use, e-reserves, related laws including DMCA and TEACH and managing copyright in the public and school environments.

**Credit Hours:** 3

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**IS\_LT 9455: Formative and Summative Evaluation**

Study of the process of gathering data and making judgments about the effectiveness of instructional programs that uses technology. Covers techniques of a formative evaluation process to revise instruction. Culminating project is planning and conducting a portion of a summative evaluation of instructional program.

**Credit Hours:** 3

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**IS\_LT 9456: Designing Computer Support for Collaborative Learning**

Students will examine the theoretical bases for using collaboration and social interaction as methods for learning, and learn key methods and approaches for designing computer supported collaborative learning. Graded A-F only.

**Credit Hours:** 3

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**IS\_LT 9457: Designing Computer Support for Cooperative Work**

Study of the tools and methods of groupware and communities of practice, including their psychological, social and organizational effects. Students focus on designing and developing improved tools and methods. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9458: Technology and Assessment**

Learn how to assess specific types of knowledge, using technology to enhance the process. Topics include use of tools/strategies for data collection to guide instructional decision-making and investigating technologies to improve assessment of student learning. Emphasis on aligning learning objectives, activities, and assessments and developing



performance assessments to measure higher-order thinking. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9460: Human Computer Interaction Research and Analysis**

Human Computer Interaction (HCI) is a discipline concerned with the design, evaluation, and implementation of interactive computing systems for human use and with the study of major phenomena surrounding these systems. This course provides an overview of the interdisciplinary HCI field while focusing on the theories and research. Students will apply principles and research methods to a range of interface design problems that impact learning, information retrieval, and performance tools. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9461: Interaction Design**

Students will learn the basic concepts of interaction design, then focus on usability engineering and prototyping principles to support the design process for learning and performance based technologies.

**Credit Hours:** 3

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**IS\_LT 9466: Learning Analytics**

Learn how to discover, interpret, and communicate meaningful data patterns in this introductory course. Explore models and applications of learning analytics, as well as privacy and ethical considerations related to the collection and dissemination of learning data. Gain hands-on experience with analytics technologies (e.g., Tableau or Python) that can be used to prepare, visualize, and share data pertaining to learning. Graded on A-F basis only. Note: No programming background required for Tableau option.

**Credit Hours:** 3

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**IS\_LT 9467: Technology to Enhance Learning**

Strategies for integrating technology into the teaching and learning process, with a focus on enhancing how students think rather than what they think. Special attention given to supporting higher order thinking and problem solving with technology.

**Credit Hours:** 3

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**IS\_LT 9468: Learning and Task Analysis**

Multiple methods for conducting task analysis for learning to identify learning processes, learning topics, and learning experiences, including procedural, prerequisites, cognitive simulations, case libraries, environmental analysis, and decision making.

**Credit Hours:** 3

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**IS\_LT 9469: Designing Electronic Performance Support Systems**

Performance support systems (PSS) are technology systems that support human activity within the complexities of organizational requirements and processes. Students build competency for designing PSS.

**Credit Hours:** 3

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**IS\_LT 9470: Computer Science for Educators**

In this 8-week course we will examine practices and concepts central to computer science education at the secondary level. We will introduce algorithms, programming, the structure of a computing system, networks and the Internet, and data analysis. Our hands-on work will use the JavaScript programming language. The course integrates instructional strategies, practices of computational thinking, and the central ideas from the AP Computer Science Principles Curriculum. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9471: Instructional Systems Design**

Develop knowledge and skills related to the systematic design of instruction. Learn to analyze, design, develop, implement, and evaluate learning systems and instruction. Identify appropriate technologies to support learning and explore alternative models of instructional design.

**Credit Hours:** 3

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**IS\_LT 9473: Project Management**

This course introduces the learner to the necessary and practical project management concepts and skills that lead to reductions in project cycle time while maintaining control over budget, resources, risk, and delivered value. This course proposes to integrate practical project management skills within the project management lifecycle (i.e., initiating, planning, executing, controlling, and closing).

**Credit Hours:** 3

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**IS\_LT 9474: Front End Analysis of Systems**

Develop skills for systematically analyzing learning, or other types of systems, that need to be improved. Develop data collection instruments (e.g. surveys, observation protocols, interviews); analyze secondary data; analyze tasks or activities in the system, and interpret data to make recommendations for system improvement. Skills will be learned by doing and applying to real systems that need improvement.

**Credit Hours:** 3

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**IS\_LT 9475: Diffusion of Educational Innovations**

In-depth analysis of innovation development and adoption processes in educational organizations, including schools, universities, and training centers.

**Credit Hours:** 3

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**IS\_LT 9480: Internship in Information Science and Learning Technologies**

Provides internship experience under supervision in advanced levels of practical experience in Information Science and Learning Technology Research and Teaching. Graded on S/U basis only.

**Credit Hour:** 1-99

**Prerequisites:** School director's consent

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**IS\_LT 9481: School Library Internship**

12 weeks of guided practice in K-12 school libraries. Strengthens, extends effective professional skills, attitudes, dispositions, essential to supporting student learning and achievement. Graded on S/U basis only.

**Credit Hour:** 1-8

**Prerequisites:** Instructor permission and enrollment in library media specialist emphasis area; satisfactory completion of IS\_LT 7306 and IS\_LT 7307

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**IS\_LT 9483: Capstone: Online Education Emphasis Area**

Culminating course for Online Education emphasis area in Information Science and Learning Technologies graduate degree. Design/develop/evaluate an online course or rework existing course. Analyze evaluation data from two external reviewers (novice/expert). Write paper describing results and modifications. To be taken during last semester of student's program. Graded on S/U basis only.

**Credit Hour:** 1

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**IS\_LT 9484: Teaching Online Courses**

Learn to be an effective online instructor! Examine issues in teaching and learning online; instructor and student roles; instructional strategies for supporting diverse learners; methods of student assessment; online communication; classroom management; characteristics of online learning management systems. Projects put you in the role of instructor to practice what you learn.

**Credit Hours:** 3

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**IS\_LT 9485: Designing Online Learning**

Online learning is everywhere! This online course will teach you how to leverage existing software tools to design and develop online learning activities in multiple domains that are grounded in sound learning principles. Course will focus on developing online learning for meaningful learning outcomes such as problem solving, building communities, and developing collaboration skills.

**Credit Hours:** 3

**Prerequisites:** Instructor consent

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**IS\_LT 9486: Advanced Designing Games for Learning**

Apply knowledge of serious game design to real-world problems in the learning community by working with a real client. Incrementally design a game prototype to pitch to Adroit Studios gaming lab. Evaluate the success of learning in game design using instructional frameworks. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** IS\_LT 7384 or instructor consent

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**IS\_LT 9489: Cultural Heritage**

Cultural heritage has many definitions but deals largely with the overarching legacy formed among a culture of people through such things as oral tradition and folklore, artifacts, monuments, architecture, and literature. The Seminar in Cultural Heritage course will introduce students to cultural heritage concepts and explore pressing contemporary topics on cultural heritage such as the importance and value of heritage tourism, why cultural heritage is historically a target for military attacks, and who merits commemoration in the public square. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9490: Archival Practice**

Students address evidence, memory, and power dynamics while defining the archival profession, principles, and core archival knowledge guiding

professional practice. Explore the archival profession through original research centered on the social responsibilities of archivists. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9491: Appraisal and Archival Systems**

Students discuss appraisal theory, documentation strategies, and microappraisal applications. Learn strategies for collection preservation and access using ArchivesSpace, and relate the records continuum and lifecycle theories to the archival mission. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9492: Data and Records Management**

Examine societal recordkeeping and professional work to identify, manage, preserve, and provide multimedia records access for evidential, legal, leisure, and informational purposes. Study trust and transparency in records, and apply archival ethics through project-based learning. Graded on A-F basis only.

**Credit Hours:** 3

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**IS\_LT 9499: Library and Information Science ePortfolio**

Provides structured feedback to students developing the ePortfolio. Focuses on writing, reflection, and career preparedness. Restricted to students in final semester of MLIS program. Graded on A-F basis only.

**Credit Hour:** 1

**Prerequisites:** IS\_LT 7305 and instructor consent

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**IS\_LT 9910: Design and Analysis of Research in Information Science and Learning Technologies**

Design and analysis of academic research in the domains of library and information science, learning science, and learning technologies. Students will analyze published literature in their fields, write a systematic literature review, research question, and research proposal, as well as engaging in extensive peer review. Graded on A-F basis only.

**Credit Hours:** 3

**Recommended:** Course is restricted to doctoral students only, except by permission of instructor

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