

### Proposal to the Senate Educational Policy Committee

**PROPOSAL TITLE:** Establish a New Bachelor of Science in Information Sciences in the School of Information Sciences

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**COLLEGE CONTACT:** Linda C. Smith, Professor and Executive Associate Dean, School of Information Sciences, 217-333-7742, lcsmith@illinois.edu

**BRIEF DESCRIPTION:** The School of Information Sciences (iSchool) seeks to establish a Bachelor of Science in Information Sciences. The iSchool at Illinois already offers an M.S. in Library and Information Science (accredited by the American Library Association), an M.S. in Information Management, a concentration in the campus-wide M.S. in Bioinformatics, a Certificate of Advanced Study, and a Ph.D. The new B.S., which strongly supports the Information and Technology category of Visioning Future Excellence, is a human-centered and user-focused interdisciplinary degree intended to prepare students for the 21<sup>st</sup>-century knowledge economy. Through the theoretical and conceptual foundations taught in the introductory course (IS101: Introduction to Information Sciences) and the development of analytic and information technology skills, the degree program will offer students a broad education in the information sciences, as well as the opportunity to specialize in a particular area through additional elective coursework within the school. The B.S. in Information Sciences is intended to build on the iSchool's established strengths and to develop well-rounded information professionals who are equipped to handle the challenges of the knowledge economy. The degree will require 123 credit hours of which 51 will be coursework for the major, including 7 required courses and 30 credit hours of electives (see Appendix A).

#### JUSTIFICATION:

With the acceleration of the knowledge economy, the state of Illinois and the nation are in need of professionals who combine information technology skills with a deep understanding of how people interact with information. As a charter member of the iSchool Caucus (established in 2005), the School of Information Sciences is an international leader in the information field. Members of the iSchool Caucus "promote an interdisciplinary approach to understanding the opportunities and challenges of information management, with a core commitment to concepts like universal access and user-centered organization of information" and expertise in "understanding the uses and users of information, the nature of information itself, as well as information technologies and their applications."<sup>12</sup> For almost 125 years the iSchool at Illinois has provided a well-rounded and highly regarded graduate education to students from Illinois and beyond. However, a degree with this emphasis has not been available to undergraduates at this university. The proposed degree will bring the expertise of the faculty who offer the #1-

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<sup>1</sup> <http://ischools.org/about/>

<sup>2</sup> <http://ischools.org/about/charter/>

ranked graduate program in library and information science in the U.S. to undergraduates at the University of Illinois.

Richard E. Rubin states that information science has three primary features: First, it focuses on information phenomena regardless of format. Second, it is concerned with the entire life cycle of information from creation to destruction. Finally, it is an interdisciplinary field.<sup>3</sup> In recognition of this latter feature, when the iSchool changed its name the faculty, chose “information sciences” in order to better describe the school’s mission and vision. As with the iSchool’s other degrees, the B.S. in Information Sciences is less machine-focused and features an interdisciplinary, human-centered, and user-focused approach to understanding the place of information in society, providing students with the skills for managing information in the knowledge economy. This new degree will ensure that the school fulfills its mission “...to lead the way in understanding the use of information in science, culture, society, commerce, and the diverse activities of our daily lives.”<sup>4</sup> By providing undergraduates with both breadth and depth in information sciences, the proposed degree is intended to educate students for a wide range of careers that require an awareness of how people interact with information as well as technical information management skills. The B.S. in Information Sciences offers a strong foundation in information theory and social inquiry, as well as the analytical and technical skills which are necessary for the 21<sup>st</sup> century knowledge economy. The required courses for the degree provide an overview of all of these aspects of information sciences. For example, topics in Introduction to Information Sciences include an overview of fundamental information concepts, the history and role of information in society, the organization of information, metadata, information discovery, the design of information management systems and services, and information policy and ethics. Another required course, Research Design for Information Sciences, teaches students how to develop research questions regarding information problems such as how users interact with information discovery systems, conduct basic research on these problems, and report their findings with clarity. It also introduces students to the need to be attentive to sound ethical principles involved in such research. Elective pathways within the proposed degree offer depth in various areas of information sciences such as information design and information sciences and culture.

As noted above, the School of Information Sciences is an internationally recognized leader in the information field. Strengths of the faculty include information retrieval, information access, data curation, data analytics, digital youth, database design, ontologies, text and data mining, digital libraries, knowledge management, human-computer interaction, interface design, social computing, privacy, information policy, information ethics, and human information behavior (see Appendix B). The B.S. at the iSchool will draw on the interdisciplinarity of the faculty in order to provide undergraduate students with a human-centered, well-rounded approach to the information sciences. By combining both the seven required courses and elective pathways, it is intended to offer a variety of courses and paths to students with a wide range of interests and career goals. Students with this degree would be prepared for job opportunities in many fields including government, academia, industry, research, and non-profit organizations. Possible job titles for students who complete the degree include technology support specialist, policy analyst, user experience designer, instructional coordinator, data manager, project manager, and systems

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<sup>3</sup> Rubin, Richard E. 2016. *Foundations of Library and Information Science* (4<sup>th</sup> ed.). Chicago, IL: Neal-Schuman.

<sup>4</sup> <http://ischool.illinois.edu/our-school/overview#mission>

manager. The degree will also make us competitive with our peer institutions, many of which already offer a similar degree program (see Appendix E).

### *Structure of the Proposed B.S in Information Sciences*

#### Overview

The B.S. in Information Sciences is intended to educate students who are skilled in organizing and managing digital information; using information in particular application areas; and who understand the human dimensions, social context, and policy implications of information technology. The degree consists of 123 credit hours of which 51 will be courses for the major.

#### Goals

- Equip students to be leaders in a knowledge society and innovators in a knowledge economy
- Educate students for known, emerging, and currently unforeseeable careers in information sciences
- Provide an interdisciplinary education where studies in fundamentals of information sciences and in application areas are fully integrated
- Ensure that various upper-division elective pathways of the major share a common core of information sciences knowledge
- Provide a program with enough flexibility to facilitate transfers into the major at the sophomore level, transfer across colleges at the sophomore and junior level, and transfers from two-year colleges
- Since information sciences is a rapidly developing field, offer a flexible program that responds quickly to new needs and opportunities, and to new findings and approaches in the information sciences
- Prepare interested students for graduate study in information sciences and related fields

The required courses (21 credit hours) consist of four core courses for all majors, two courses in information technology implementation, and one course in information sciences and culture:

#### *Core Courses*

- IS 101 Introduction to Information Sciences (3 hours)
- IS 202 Social Aspects of Information Technology (3 hours)
- IS 203 Analytical Foundations for Information Problems (3 hours)
- IS 204 Research Design in Information Sciences (3 hours)

#### *Information Technology Implementation*

- IS 205 Programming for Information Problems (3 hours)
- IS 206 Database Concepts & Applications (3 hours)

#### *Information Sciences and Culture*

- IS 307 Race, Gender and Information Technology (3 hours)
- OR

- IS 308 Computers and Culture (3 hours)  
OR
- IS 309 Historical Foundations of the Information Society (3 hours)

The remaining 30 hours will consist of electives in pathways such as Data Curation & Management, Information Privacy & Policy, Information Sciences & Culture, Youth Literature & Culture, and Information Design. These electives include courses such as IS 451 Introduction to Network Systems, IS 456 Information Storage & Retrieval, and IS490 IT Entrepreneurial IT Design in the School of Information Sciences as well as courses approved for the major and offered by departments in other colleges. The list of approved electives will be maintained by the director of the undergraduate program in consultation with the advising staff. Approved courses must fulfill program goals as stated on page 3.

**BUDGETARY AND STAFF IMPLICATIONS:** *(Please respond to each of the following questions.)*

1) Resources

- a. How does the unit intend to financially support this proposal?

Faculty and staff needed to start the program are already in place. The School has fully staffed Student Services, Enrollment Management, and Information Technology offices, and current faculty can accommodate the additional instructional units for 50 initial majors. Tuition income will provide the resource base needed for additional program expansion.

- b. How will the unit create capacity or surplus to appropriately resource this program? If applicable, what functions or programs will the unit no longer support to create capacity?

Faculty members will teach the needed courses on-load; as described above we already have faculty and staff capacity to accommodate 50 initial majors. The school will hire five new faculty members this year and plans to add more in the coming years. A program director will also be appointed. The school plans to scale the program slowly over time in keeping with the school's recent experience with its M.S. in Information Management (admitted students beginning Fall 2016). Tuition income will provide more resources as the program grows and additional elective courses will be added.

iSchool student services staff currently consists of 3 graduate studies advisors, an employer relations coordinator (primarily employer facing), a career services coordinator (student facing), and an assistant dean. In order to adequately serve a diverse undergraduate population, an additional undergraduate student services coordinator would be needed to manage the unique institutional requirements, needs and administrative processes these students would bring. In addition, an academic advisor would be required to provide services and support related to program planning, course registration, and student degree completion demands. While many of the systems we use to manage student services and records can be expanded or

evolved to include the needs of undergraduate students, additional systems and training on existing campus systems will be required. We have recently augmented our staff to support a new graduate-level degree and are prepared to make more additions to ensure the needed student services support for undergraduate students at every stage in their program.

- c. Will the unit need to seek campus or other external resources? If so, please provide a summary of the sources and an indication of the approved support.

No additional campus or external resources will be sought.

- d. Please provide a letter of acknowledgment from the college that outlines the financial arrangements for the proposed program.

[Letter appended from Dean Allen Renear]

## 2) Resource Implications

- a. Please address the impact on faculty resources including the changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc.

The addition of this degree program will allow us to better use existing faculty resources. We anticipate an increase in class size (providing teaching assistant support as needed) and student-faculty ratios, but not in teaching loads. Three of the proposed nine required courses along with several electives are already taught at the school. The school will add five faculty members in the coming year and plans to add more in the future, providing capacity to develop and teach additional courses. Several faculty members already teach in the Informatics Minor and training through CITL focused on effective teaching of undergraduates will be highly recommended to all faculty who will teach in the proposed major.

- b. Please address the impact on course enrollment in other units and provide an explanation of discussions with representatives of those units. *(A letter of acknowledgement from units impacted should be included.)*

Courses for the major will be offered by the iSchool, with the option of taking some electives in other departments. Letters of support from the departments of Business Administration, Communication, Computer Science, and Media and Cinema Studies are included in Appendix D.

- c. Please address the impact on the University Library *(A letter of estimated impact from the University Librarian must be included for all new program proposals. If the impact is above and beyond normal library business practices, describe provisions for how this will be resourced.)*

We have worked closely with the University Library to ensure strong support for our courses. We do not anticipate that this proposed program will place new, unique demands on either collections or personnel.

[Letter appended from Dean John Wilkin]

- d. Please address the impact on technology and space (e.g. computer use, laboratory use, equipment, etc.)

The School has sufficient information technology and instructional technology staff to support the expansion in instruction. The iSchool maintains its own Moodle server that is readily extensible to support undergraduate courses and the iSchool also staffs its own technology help desk.

For new degree programs only:

- 3) Briefly describe how this program will support the University's mission, focus, and/or current priorities. Include specific objectives and measurable outcomes that demonstrate the program's consistency with and centrality to that mission.

Information and Technology was one of six theme areas identified in Visioning Future Excellence. This report noted the existing leadership on campus in such areas as data science and observed that "our campus strives to be at the leading edge of offering educational opportunities to students through a variety of new modalities." To the list of programs identified, we seek to extend the list of degrees with this new B.S. in Information Sciences.

Similarly the January 2014 report prepared for the Research Park on "Identification of Technology Clusters for Economic Development" recommends a focus on Data Analytics and Management, and Computing as one of three clusters with opportunities for growth. The report notes (p. 4): "A critical mass of assets, talent, innovation, activity and support are present and form a strong foundation, and must continue to grow beyond the current level." A new B.S. in Information Sciences will contribute to this effort.

The School of Information Sciences has been successful in recruiting women and members of underrepresented groups into its M.S. in Library and Information Science and its M.S. in Information Management (more than ½ of those enrolled in the MS/IM in fall 2017 are female). We intend to continue and expand that success in the proposed program, advancing the inclusion of women and members of underrepresented groups in STEM fields, and in this way contributing to the University's inclusion agendas.

- 4) Please provide an analysis of the market demand for this degree program. What market indicators are driving this proposal? What type of employment outlook should these graduates expect? What resources will be provided to assist students with job placement?

The proposed undergraduate degree program will take a human-centered approach to information and technology, preparing students to work in a variety of roles in the information industry including information policy analyst, data curator, data manager, web designer,

information consultant, digital curation specialist, health information specialist, education technology specialist, and project manager.

These are areas where the Bureau of Labor Statistics ([www.bls.gov](http://www.bls.gov)) projects significant growth in the next decade, for example:

- Instructional Coordinators (7%)
- Web Developers (27%)
- Computer Systems Analysts (21%)
- Archivists, Curators, and Museum Workers (7%)
- Computer and Information Systems Managers (15%)

In addition, this degree also prepares students for graduate education in a variety of fields.

The iSchool has embedded staff members who will assist students with job placement. The Employer Relations Coordinator and Career Services Coordinator will help students prepare for and identify future employment opportunities as well as guide students through the placement process.

**DESIRED EFFECTIVE DATE:** August 16, 2018. Accepting admissions for Spring 2020.

**STATEMENT FOR PROGRAMS OF STUDY CATALOG:** *(All proposals must include either a new or revised version of the entry in the Programs of Study Catalog, if applicable. Entries will be published as approved by the Senate. Future changes in the statement for Programs of Study Catalog which reflect changes in the curriculum, must go through the normal review process at the appropriate levels.)*

## Overview

Information Sciences, School of  
<http://ischool.illinois.edu>

[ischool.illinois.edu](http://ischool.illinois.edu)

Dean of the School: Allen H. Renear  
501 East Daniel Street  
Champaign, IL 61820-6211  
(217) 333-7197, (800) 982-0914 (within the U.S.)  
E-mail: [ischool-apply@illinois.edu](mailto:ischool-apply@illinois.edu)

Major: Information Sciences  
Degree Offered: B.S.

The School of Information Sciences (iSchool) offers a program of study leading to the Bachelor of Science (B.S.). The B.S. in Information Sciences is an interdisciplinary, human-centered,

user-focused degree that prepares students for careers that emphasize the interaction of people, information, and technology.

### **Admission**

Applicants are admitted in the fall and spring semesters.

#### **Admission Requirements for Freshmen:**

- The general admission requirements of the University apply
- Consideration is also given to computer skills
- Application fee
- Self-reported academic record (SRAR)
- Official test scores – Standardized test scores are required for admission review: either ACT (code 1154) or SAT I (code 1836) scores are accepted
- English proficiency
  - International students must score at least 620 on the paper-based Test of English as a Foreign Language (TOEFL) (260 on the computer-based test; 104 on the iBT version); or 7 on each section of the IELTS.

For more detailed information regarding application requirements and the application process, please visit the University of Illinois Admissions website at: [www.admissions.illinois.edu](http://www.admissions.illinois.edu).

#### **Admission Requirements for Inter-College Transfer Students (ICT)**

- Current University students should demonstrate interest in the major by earning a B or better in introductory courses such as IS 101, 202, 203, 205, or 206
- Cumulative minimum GPA of 2.50 or higher
- Successful completion of the application process for entry

#### **Admission Requirements for Transfer Students**

Students seeking to transfer from another university may apply early in the spring semester provided they will have completed at least 30 transferable hours by the end of the spring semester. Hours planned during upcoming summer semesters are not considered. Forms are available from the University Office of Admissions and Records.

Majors and minors in areas outside of the iSchool are encouraged to complement the B.S. in I.S.

See our website and the Illinois Office of Undergraduate Admissions for further information.

### **Degree Requirements**

#### **Bachelor of Science, Information Sciences**

The Bachelor of Science in Information Sciences prepares students for a wide range of careers within the knowledge economy. It develops skills in organizing and managing digital



information; using information in particular application areas; and understanding the human dimensions, social context, and policy implications of information technology. Students must demonstrate proficiency in at least one programming language in order to graduate. This may be demonstrated through completion of IS 205, an equivalent course in another department, or by passing a proficiency test established by the school. The degree is offered on campus.

Minimum Hours for Graduation: 123

**Required Courses:**

IS 101  
 IS 202  
 IS 203  
 IS 204  
 IS 205  
 IS 206  
 IS 307, IS 308, or IS 309

**Required Hours:**

3 hours  
 3 hours  
 3 hours  
 3 hours  
 3 hours  
 3 hours  
 3 hours

Independent Study

max 6 (not required)

Minimum GPA: 2.50

<b>Required Major Courses</b>		<b>21</b>
IS 101	Introduction to Information Sciences	3
IS 202	Social Aspects of Information Technology	3
IS 203	Analytical Foundations for Information Problems	3
IS 204	Research Design for Information Sciences	3
IS 205	Programming for Information Problems	3
IS 206	Database Concepts & Applications	3
IS 307 Or IS 308 Or IS 309	Race, Gender and Information Technology Computers and Culture Historical Foundations of the Information Society	3
School of Information Sciences Electives or approved courses in other departments		30
Students must earn at least 51 hours in the School of Information Sciences or in approved courses offered by other departments		
<b>Total</b>		<b>51</b>
Additional coursework	<i>Additional electives outside of the school and General Education Requirements</i>	
<b>Total</b>		<b>72</b>
<b>Minimum hours required for graduation</b>		<b>123</b>

## Graduation


To graduate, students must satisfy all University requirements as to residency, scholarship, and fees and must complete the University's general education requirements. Students must demonstrate proficiency in at least one programming language in order to graduate. All students also must fulfill these general requirements of the School of Information Sciences


- Complete a total of at least 123 semester hours of course credit
- Earn a cumulative grade point average of 2.50 (A = 4.00) in all courses presented for the degree and a cumulative 2.50 grade point average for all courses taken in the School.

Departmental Distinction: The top 10% of the B.S.I.S graduating class will graduate with distinction.

**CLEARANCES:** *(Clearances should include signatures and dates of approval. These signatures must appear on a separate sheet. If multiple departments or colleges are sponsoring the proposal, please add the appropriate signature lines below.)*

Signatures:

  
\_\_\_\_\_  
Unit Representative:

  
\_\_\_\_\_  
Date:

\_\_\_\_\_  
College Representative:

\_\_\_\_\_  
Date:

\_\_\_\_\_  
Provost Representative:

\_\_\_\_\_  
Date:

## **BACK MATTER**

### **APPENDIXES**

#### **Appendix A: Curriculum Plan**

#### **Appendix B: Faculty Resources**

#### **Appendix C: Course Descriptions of Required Courses**

- IS 101: Introduction to Information Sciences
- IS 202: Social Aspects of Information Technology (currently offered)
- IS 203: Analytical Foundations for Information Problems
- IS 204: Research Design for Information Sciences
- IS 205: Programming for Information Problems
- IS 206: Database Concepts & Applications
- IS 307: Race, Gender and Information Technology (previously offered as an IS390RGI)
- IS 308: Computers and Culture (currently offered as IS390CC)
- IS 309: Historical Foundations of the Information Society (currently offered as IS390HFI)

#### **Appendix D: Letters of Support**

iSchool Dean (Financial Arrangements)

Department of Business Administration

Department of Communication

Department of Computer Science

Department of Media and Cinema Studies

College of Business

University Library (Impact)

#### **Appendix E: Comparable Programs at Peer Institutions**

Rutgers University

Syracuse University

University of North Carolina

University of Washington.

## **Appendix A Curriculum Plan**

The major requires 51 hours.

The required courses (21 hours) consist of four core courses, two courses in information technology implementation, and one course in information sciences and culture. Students must demonstrate proficiency in at least one programming language.

### Core Courses

- IS 101: Introduction to Information Sciences
- IS 202: Social Aspects of Information Technology
- IS 203: Analytical Foundations for Information Problems
- IS 204: Research Design in Information Sciences

### Information Technology Implementation

- IS 205: Programming for Information Problems
- IS 206: Database Concepts & Applications

### Information Sciences and Culture

- IS 307: Race, Gender and Information Technology

OR

- IS 308: Computers and Culture

OR

- IS 309: History and Foundations of the Information Society

The remaining 30 hours consist of electives in pathways such as Data Curation & Management, Information Privacy & Policy, Information Sciences & Culture, Youth Literature & Culture, and Information Design. These electives may be taken in the School of Information Sciences or in courses approved for the major and offered by departments in other colleges.

Note: IS202, IS307 (IS 390RGI), IS 308 (IS390CC), and IS309 (IS390HFI) are currently taught. IS206 is a modification of an existing upper-level course.

## **Appendix B**

### **Faculty Resources**

Masooda Bashir, Assistant Professor; PhD, Psychology, Purdue

Areas of expertise: The interface of information technology, psychology, and society, especially how privacy, security, and trust factors intersect from a psychological point of view with information technology.

Catherine Blake, Associate Professor and Associate Director, Center for Informatics Research in Science and Scholarship; PhD, Information and Computer Science, University of California, Irvine

Areas of expertise: Biomedical informatics, natural language processing, evidence-based discovery, learning health systems, socio-technical systems, data analytics, literature based discovery.

Maria Bonn, Senior Lecturer; PhD, American Literature, SUNY Buffalo

Areas of expertise: Publishing, scholarly communication, networked communication, the economics of information.

Robert J. Brunner, Professor, PhD, Astrophysics, The Johns Hopkins University

Areas of expertise: The development of data science, the application of machine learning, algorithmic optimization, statistical uncertainty and its incorporation in machine learning, data management, effective visualization, and data storytelling.

Nicole A. Cooke, Assistant Professor; PhD, Communication, Information and Library Studies, Rutgers

Areas of expertise: Human information behavior, particularly in an online context; diversity and social justice in librarianship; LIS education and pedagogy, particularly in the online environment; information literacy and instruction.

Peter Darch, Assistant Professor; PhD, Computer Science, Oxford

Areas of expertise: Citizen science, information infrastructures for science, sociotechnical challenges to scientific data curation, material politics of scientific collaboration.

Jana Diesner, Assistant Professor; PhD, Computer Science, Carnegie Mellon

Areas of expertise: Human-centered data science, computational social science, network science, natural language processing, machine learning, data regulations.

J. Stephen Downie, Professor and Associate Dean for Research; PhD, Library and Information Science, Western Ontario

Areas of expertise: Design and evaluation of information retrieval systems, including multimedia music information retrieval; the political economy of internetted communication systems; database design; Web-based technologies.

David Dubin, Teaching Associate Professor; PhD, Information Science, Pittsburgh

Areas of expertise: The foundations of information representation and description; issues of expression and encoding in documents and digital information resources.

Les Gasser, Professor; PhD, Information and Computer Science, University of California, Irvine  
Areas of expertise: Social informatics; collective, distributed, and self-organizing information systems; conceptual foundations of information; extreme-scale distributed simulation; origins and use of information in biological systems.

Elizabeth Hoiem, Assistant Professor; PhD, English, Illinois  
Areas of expertise: Children's literature and material culture, British literature, history of education and literacy, social history, child labor, thing theory, fantasy, science fiction, science and technology in literature, automata, digital humanities pedagogy.

Lori Kendall, Associate Professor; PhD, Sociology, University of California, Davis  
Areas of expertise: Personal archiving; online community and identity; social aspects of computing; research methodology; and gender and technology.

Emily Knox, Assistant Professor; PhD, Communication, Information and Library Studies, Rutgers  
Areas of expertise: Information access, intellectual freedom and censorship, information ethics, information policy, print culture and reading practices.

Kathryn La Barre, Associate Professor; PhD, Information Science, Indiana  
Areas of expertise: Interrogating historical and contemporary naming practices and power dynamics in cultural heritage collections of films, comics and zines. Methods: Community-based participatory research and oral history.

Bertram Ludäscher, Professor and Director, Center for Informatics Research in Science and Scholarship; PhD, Computer Science, Freiburg (Germany)  
Areas of expertise: Data and knowledge management, specifically the modeling, design, and optimization of scientific workflows, provenance, data integration, and knowledge representation; scientific workflow systems; data curation.

Rachel M. Magee, Assistant Professor; PhD, Information Studies, Drexel  
Areas of expertise: Teens, youth, everyday life, technology use and non-use, youth services, social computing, values and design.

Bonnie Mak, Associate Professor; PhD, Medieval Studies, University of Notre Dame  
Areas of expertise: Manuscript, print, and digital cultures; the production and circulation of knowledge; manuscript studies; book history; history of science; medieval and early modern collecting; history of archives and libraries.

Jerome McDonough, Associate Professor; PhD, Library and Information Studies, Berkeley  
Areas of expertise: Sociotechnical and social constructionist approaches to design and development of information systems; digital preservation and knowledge curation; metadata and information.

Kate McDowell, Associate Professor; PhD, Library and Information Science, Illinois  
Areas of expertise: Storytelling practices and applications (in higher education, non-profits, business, and public service); youth services librarianship; children's print culture history; public libraries as cultural spaces.

Allen Renear, Professor and Dean; PhD, Philosophy, Brown  
Areas of expertise: Development of formal ontologies for scientific and cultural objects and application of those ontologies in information system design, scientific publishing, and data curation in the sciences and humanities.

Jodi Schneider, Assistant Professor; PhD, Informatics, National University of Ireland, Galway  
Areas of Expertise: Linked data (ontologies, metadata, Semantic Web); argumentation and evidence; scholarly communication; knowledge organization; computer-supported cooperative work; biomedical informatics.

Linda C. Smith. Professor and Executive Associate Dean; PhD, Information Transfer, Syracuse  
Areas of expertise: History of information science; impact of new technologies on reference and information services, education for library and information science, with particular attention to online pedagogy.

Victoria Stodden, Associate Professor; J.D. and PhD, Statistics, Stanford  
Areas of expertise: Enabling reproducibility in computational science, including the study of adequacy and robustness in replicated results, designing and implementing validation systems, developing standards of openness for data and code sharing, and resolving legal and policy barriers to disseminating reproducible research.

Carol Tilley, Associate Professor; PhD, Information Science, Indiana  
Areas of expertise: History of youth services librarianship, children's print culture, information inquiry and instruction in school libraries, information seeking and use, and media literacy.

Vetle Torvik, Associate Professor; PhD, Engineering Science, Louisiana State  
Areas of expertise: Mathematical optimization; computational statistics; text and data mining; literature-based discovery; bioinformatics.

Matthew Turk, Assistant Professor; PhD Physics, Stanford  
Areas of expertise: Data analysis and visualization, social structures of academic software communities, information transmission through software.

Michael Twidale, Professor; PhD, Computing, Lancaster (UK)  
Areas of expertise: Computer supported cooperative work; collaborative technologies in digital libraries and museums; user interface design and evaluation; open source usability; information visualization; ubiquitous learning, social learning of technology, rapid prototyping and evaluation.

Ted Underwood, Professor; PhD English, Cornell University

Areas of expertise: Statistical and computational modeling of humanistic evidence; machine learning and text mining; book history; digital libraries; sociology of literature; computational social science; digital humanities.

Terry L. Weech, Associate Professor; PhD, Library Science, Illinois

Areas of expertise: International librarianship; library and information science education; collection development; management and assessment of library services; government information resources; economics of information; intellectual freedom issues; public librarianship.

John Weible, Senior Lecturer; MS Engineering Technology, Pittsburg State University

Areas of expertise: Entrepreneurship and commercialization; IT management; digital library systems; systems architecture and integration; applications development; database design; efficiency/performance analysis; algorithms for deductive logic puzzles; project management.

Elizabeth Wickes, Lecturer; MS Library and Information Science, Illinois

Areas of expertise: Data curation; research data management; research programming.

Kate Williams, Associate Professor; PhD, Information, Michigan

Areas of expertise: Technology use in local communities and by ordinary people; public libraries past, present, and future; social capital as a crucial resource in the information revolution.

Martin Wolske, Senior Research Scientist; PhD, Behavioral Neuroscience and Biopsychology, Rutgers

Areas of expertise: Community-based collaborative spaces; communities of practice; public engagement; service learning; action research.



## **Appendix C: Course Descriptions of Required Courses**

School of Information Sciences

B.S.I.S. Required Courses

### **IS101: Introduction to Information Sciences**

#### **Course Description**

This course provides an introduction to the field of information sciences and the major. It offers both historical and contemporary context for understanding the role of information in society. Focus is placed upon critical analysis of information problems as well as understanding the creation, use, and distribution of information in business, policy, education, government, health, and other sectors.

#### **Credit Hours**

3 credit hours

#### **Contact Hours**

Course meets for 1 hour and 20 minutes twice weekly

#### **Prerequisites**

None.

#### **Course Objectives**

Upon successful completion of the course, students will:

- understand relationships among people, information, and technology;
- have gained familiarity with the history, theory, philosophy and methodologies of the field of information sciences; and
- be able to apply critical analytical skills to information problems.

#### **Required Readings**

Bawden, D. & Robinson, L. (2012). *Introduction to Information Science*. Chicago, IL: American Library Association.

Three to five journal articles and book chapters per week.

#### **Assessment**

- Quizzes (20%) Five-minute quiz on the readings at the beginning of every class.
- Response Paper (10%) Short paper presenting a summary and analysis of the week's readings.

- Project (30%) Students will work on a term project in groups of four. Students explore the knowledge management requirements for an organization of their choice.
- Exams (40%) Midterm and final exams.

### **Topics**

- Theories of information science and technology
- Knowledge organization systems and approaches
- Introduction to information retrieval
- Introduction to computer architecture
- The Internet and World Wide Web
- User experience and design
- Introduction to data modeling
- Knowledge management in organizations
- Race, gender, class and information technology
- Information use and behavior
- Information policy and ethics

**Instructors:** Downie, Dubin, Knox, Schneider

## **IS202: Social Aspects of Information Technology**

### **Course Description**

Explores the way in which information technologies have and are transforming society and how these affect a range of social, political and economic issues from the individual to societal levels.

### **Credit Hours**

3 credit hours

### **Contact Hours**

Course meets for 1 hour and 20 minutes twice weekly

### **Prerequisites**

None.

### **Course Objectives**

Upon successful completion of the course, students will understand:

- the history and intellectual foundations of several competing perspectives on how ICTs and social arrangements interact.
- how arguments are made from competing social informatics perspectives.

- a range of specific problems addressed by social informatics, in arenas such as information privacy, health, information/cyber warfare, ICTs and work, identity, social media, and data-intensive (“big data”) systems.

Students will have demonstrated:

- the skills of detailing and discussing several competing perspectives on how and why specific social arrangements and specific ICTs interact.
- the skills of applying competing social informatics perspectives to specific ICT design and analysis problems in particular situations.
- the skills of analyzing and evaluating policy implications of ICT design choices and socio-technical arrangements from several competing social informatics perspectives.

Students will appreciate:

- The attitude that social and technical arrangements are inseparable and intertwined.
- The attitude that human/social choice and historical/institutional landscapes shape sociotechnical arrangements.
- The attitude that multiple perspectives are key in analyzing and designing sociotechnical arrangements.
- The value that participants with different power and perspectives deserve a place at the table when creating sociotechnical arrangements.

### **Required Readings**

- Three to five journal articles and book chapters per week.

### **Assessment**

- Five to six page essay: digital media use analysis (20%)
- Five to six page essay: surveillance and privacy (30%)
- In class writing assignments (20%)
- Class participation (5%)
- Final exam (25%)

### **Topics**

- Introduction to social informatics
- Digital media and online interactions
- Inequalities and information technologies
- Intellectual property and copyright
- Privacy, trust, and surveillance
- Work & information technologies
- Knowledge creation & sharing
- Arts, culture, & design
- Focus on mobile devices

**Instructors:** Darch, Gasser, Kendall, Knox

## **IS203: Analytical Foundations for Information Problems**

### **Course Description**

A survey of mathematical topics for students in information sciences. Provides an introduction to sets, relations, graphs, grammars, probability, and propositional and predicate logic. These topics relate to applications in information modeling, representation and expression.

### **Credit Hours**

3 credit hours

### **Contact Hours**

Course meets for 50 minutes three times weekly

### **Prerequisites**

- MATH 124: Finite Mathematics

### **Course Objectives**

Upon successful completion of the course, students will:

- be able to apply fundamental mathematical tools for solving problems of information modeling and expression.
- be prepared for further core and elective undergraduate coursework in information sciences.

### **Required Readings**

Wallis, W. D. (2013). *Mathematics in the Real World*. Birkhäuser.

van Benthem, J., van Ditmarsch, H., van Eijck, J., & Jaspars, J. (2014). *Logic in Action*. Amsterdam, NL: Logic in Action Open Course Project.

### **Assessment**

- Homework: 12 problem sets (36%)
- Seven quizzes completed in class (49%)
- Final exam (15%)

### **Topics**

- Sets and relations as models of application domains
- Problems of combinations and arrangements
- Probability and the probabilistic view of information
- Distributions as models of data and events
- Graphs and trees as domain models
- Strings, codes, errors, and privacy
- Facts and rules in the propositional and predicate calculi

**Instructors:** Dubin, Renear, Schneider, Torvik

## **IS204: Research Design for Information Sciences**

### **Course Description**

This course provides an introduction to different approaches to research in the information sciences, including social science methods, data and text mining, digital humanities, historical approaches, and others. Topics include methods for evaluating research, developing research questions, selecting research methods, conducting research ethically, and communicating findings clearly and effectively through words, graphics, and other visualizations.

### **Credit Hours**

3 credit hours

### **Contact Hours**

Course meets for 1 hour and 20 minutes twice weekly

### **Prerequisites**

None.

### **Course Objectives**

Upon successful completion of the course, students will:

- understand different research methods that are commonly used in information sciences
- critically evaluate research
- understand how to conduct ethical research
- communicate research findings clearly and effectively

### **Required Readings**

Gray, D. E. (2014). *Doing Research in the Real World*, London, Sage Publications.

Three to eight journal articles and book chapters per week.

### **Assessment**

- Essay: information source evaluation (15%)
- Essay: literature review (15%)
- Essay: research proposal (15%)
- Midterm exam (25%)
- Final exam (30%)

### **Topics**

- Understanding the research process and evaluating research
- Research methods

- Quantitative research methods
- Qualitative research methods
- Ethics for researchers and information professionals
- Examples of research
- Visualizing and communicating information

**Instructors:** Bonn, Hoiem, Kendall, Magee

## **IS205: Programming for Information Problems**

### **Course Description**

Covers common data processing methods and computing concepts used in the information sciences. Evaluates strengths and weaknesses of the techniques in the context of our discipline. No prior programming background is assumed.

### **Credit Hours**

3 credit hours

### **Contact Hours**

Course meets for 50 minutes three times weekly

### **Prerequisites**

None.

### **Course Objectives**

Upon successful completion of the course, students will:

- be equipped to solve information management and transformation problems using a high-level programming language.
- be acquainted with information processing concepts, and computers as general purpose machines.
- be ready to complete challenging projects in other information sciences classes and in the workplace.

### **Recommended Texts**

Severance, C. R. (2013). *Python for Informatics: Exploring Information*. CreateSpace Independent Publishing Platform.

### **Assessment**

- 12 Quizzes (24%)
- 12 Homework assignments (36%)

- Midterm exam (10%)
- Final project (20%)
- Attendance and participation (10%)

### **Topics**

- Computers, programs, and algorithms
- Procedural, functional, and object-oriented programming styles
- String, numeric, and image data representation
- Dynamic data structures
- File and database organization
- Network and distributed applications

**Instructors:** Torvik, Turk, Weible, Wickes

## **IS206: Database Concepts & Applications**

### **Course Description**

The course provides students with both theoretical and practical training in good database design. By the end of the course students will be able to (a) create a conceptual data model using the enhanced entity-relationship diagrams, (b) create tables in a relational database and enforce appropriate attribute and referential integrity constraints, and (c) query multiple relational database tables using the structured query language (SQL). Other topics such as normalization, indexing, advanced sql statements and no-sql data structures will be covered as time permits.

### **Credit Hours**

3 credit hours

### **Contact Hours**

Course meets in for 50 minutes three times weekly

### **Prerequisites**

None.

### **Course Objectives**

Upon successful completion of the course, students will be able to:

- Discuss benefits and drawbacks of using a database in general and the specific benefits and drawbacks of using relational databases
- Describe both the theoretical and practical implications of good database design
- Create an enhanced entity-relationship diagram based on a given scenario

- Create relational database tables, and enforce constraints both at the attribute level (e.g. not null, data types, default values etc.) and between tables (i.e. primary and foreign keys).
- Write working queries using the structured query language (SQL) using both implicit and explicit joins for more than one table
- Understand the benefits and drawbacks of indexing
- Discuss benefits and drawbacks of no-sql databases

### **Required Readings**

Elmasri, R., & Navathe, S. (2016). *Fundamentals of Database Systems* Addison Wesley. Reading, MA.

### **Assessment**

- Two software tool introductory workshops (4%)
- Eight progressive database design exercises (72%)
- Database design capstone (20%)
- Class participation (4%)

### **Topics**

- Conceptual data modeling (entity relationship diagrams and enhanced entity relationship diagrams)
- Relational database model
- Unified Modeling Language
- SQL (with Oracle)
- Normalization
- No-SQL
- Emerging technologies

**Instructors:** Blake, Ludaescher, McDonough, Weible

## **IS307: Race, Gender and Information Technology**

### **Course Description**

This course critically examines the ways in which information technologies are shaped by and help to shape race and gender and other social relations. It explores critical theories of society and applies these to case studies of information and communication technologies (ICTs). Particular attention will be given to globalization, privacy and surveillance, labor, digital enclosures, and the various benefits and burdens of the "information society."

### **Credit Hours**

3 credit hours



## **Contact Hours**

Course meets for 1 hour and 20 minutes twice weekly

## **Prerequisites**

None.

## **Course Objectives**

Upon completion of this course, students will:

- understand theories of technology, race, gender, and other social relations
- be able to apply these theories to case studies of information technology
- be able to critically examine the relationships among information technologies, race, gender, and other social relations
- understand how issues of globalization, privacy and surveillance, labor, digital enclosures, and the information society intersect with issues of information technology and social relations

## **Required Readings**

Three to eight journal articles and book chapters per week.

## **Assessment**

- Essay: technological biography (15%)
- Group work assignment: class discussion coordination (20%)
- Written reflection on group work assignment (5%)
- Final project: proposal (5%)
- Final project: creative expression (15%)
- Final project: written background description (10%)
- Weekly online forum posts (10%)
- In class attendance and participation (20%)

## **Topics**

- Critical race theory: introduction and relevance
- Critical race theory: technology labor, and media
- Theories of technology
- Critical race theory: Critical whiteness
- Colorblindness
- Microaggressions
- Theorizing gender; Intersectionality
- Exploring race online
- Cyber-racism
- Gender online
- Social class online

- Sexuality online, cultural values in Web-browsers & search engines
- Gaming: Race, gender, neo-colonization, and "serious" games
- Surveillance and profiling
- Labor and ICTs, manufacturing, production, and disposal

**Instructors:** Cooke, Kendall, La Barre, Williams

## **IS308: Computers and Culture**

### **Course Description**

Explores cultural ideas about computers, including hopes and fears about the effects of computers on our lives. Will analyze images of computers in fiction and movies. The course will also examine hackers, online subcultures, and other computer-related subcultures, and the integration of computers into various cultural practices.

### **Credit Hours**

3 credit hours

### **Contact Hours**

Course meets for 1 hour and 20 minutes twice weekly

### **Prerequisites**

None.

### **Course Objectives**

Upon completion of this course, students will:

- understand the effects of computers on our collective and individual lives
- be able to analyze how computers are depicted in popular culture
- describe various computer-related subcultures

### **Required Readings**

Two to five journal articles and book chapters assigned per week.

### **Assessment**

- Attendance and participation in class and online discussions (20%)
- Thirty short posted responses to assigned readings (20%)
- Ten entries contributed to a shared vocabulary glossary (20%)
- Four assignments completed in class (10%)
- Final project: written and oral presentation (30%)

## **Topics**

- History and human culture
- The history of computers and the global Internet
- "New media" and meaning.
- Digital technology and the culture of education
- New media and story telling
- Comics and narrative art in the digital age
- Intellectual property, creative expression, and the concept of the remix
- Copying, curation, and collection of new media art
- Generation demographics and information technology
- Hackers, hacker culture, and hacktivism
- Internet regulation history and controversies
- Wikileaks, journalism and government secrecy
- "Cyberspace" and the cyberpunk subculture

**Instructors:** McDonough, McDowell, Tilley, Twidale

## **IS309: History and Foundations of the Information Society**

### **Course Description**

Information history covers diverse institutions and practices, from libraries and postal systems to cartography and statistics, and connects these to overarching historical processes. Taking up a succession of major topics and trends, this course revises our sense of the historical record by situating information explicitly within it.

### **Credit Hours**

3 credit hours

### **Contact Hours**

Course meets for 1 hour and 20 minutes twice weekly

### **Prerequisites**

None.

### **Course Objectives**

Upon completion of the course, students will:

- understand the history of information institutions and the information society
- be able to analyze the historical development of the information society through various conceptual lenses

## **Required Readings**

Two to four journal articles and book chapters assigned per week.

## **Assessment**

- 1200 word essay on an assigned topic (25%)
- Research project: annotated bibliography and proposal (15%)
- Research project: oral presentation (30%)
- Research project: written essay (30%)

## **Topics**

- Contending perspectives on information as a historical domain
- From prehistory to the Middle Ages
- Transition to capitalism
- Imperialism
- Science and the organization of knowledge
- States
- National institutions of memory
- Industrialization
- Information and the large corporation
- Occupations, professions, class relations
- Geopolitics of information

Instructors: Darch, La Barre, Mak, Weech

## **Appendix D: Letters of Support**

iSchool Dean (Financial Arrangements)

Department of Business Administration

Department of Communication

Department of Computer Science

Department of Media and Cinema Studies [forthcoming]

College of Business

University Library (Impact)

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN



School of Information Sciences  
501 East Daniel Street  
Champaign, Illinois 61820-6211

September 19, 2017

**Financial Arrangements for the Proposed Degree: BS in Information Sciences**

The School of Information Sciences already has the faculty and staff infrastructure needed to offer this degree — no external funding is required to initiate the program and resources for continued growth will be provided by tuition revenue from the new program.

The proposed program is not a new area of study for the iSchool, but is rather a refactoring of some of our current instructional offerings in order to (i) provide preparation for students who wish to enter the information professions; (ii) prepare students generally for the 21<sup>st</sup> century workplace and 21<sup>st</sup> century citizenship; and (iii) provide Illinois students with the opportunity to choose a major that is offered by other leading public universities.

**Start-up:** The School already has the staff and faculty capacity to begin this program and grow enrollment to at least 100 students. There will therefore be no significant new expenses during this period and we seek no new resources, nor do we need to carry out any significant reallocation of existing resources.

**Expansion:** Growing enrollment beyond 100 may require some additional staffing, but this will be supported by the additional tuition revenue realized from the program. We expect to expand our teaching capacity with additional tenure-track and specialized faculty.

**Maturity:** We anticipate an enrollment of 200-300 students within a few years. At this level of enrollment some additional tenure-system faculty and staff will be needed. These additional costs will be easily met by existing and new tuition revenue given (i) the capacity in the current tenure-system and specialized faculty, (ii) additional tuition from the program.

A handwritten signature in cursive script that reads "Allen H. Renear".

Allen H. Renear  
Dean, School of Information Sciences  
University of Illinois at Urbana-Champaign

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

Interim Department Head  
Department of Business Administration  
350 Wohlers Hall  
1206 South Sixth Street  
Champaign, Illinois 61820-6980 USA



October 10, 2016

To: Educational Policy Committee

From: B. Joseph White

A handwritten signature in black ink that reads "Joe White".

Re: Support for New Bachelor of Science in Information Sciences

All:

I write in support of the proposal to the Committee for a new Bachelor of Science in Information Sciences in the School of Information Sciences.

I have reviewed the proposal at the invitation of Dean Renear. I believe he shared it with me to ensure that the Department of Business Administration in the College of Business would view the degree as complementary and additive to the degree and concentrations offered by the College and Department. And, indeed, I do.

While the Department of Business Administration offers coursework in information technology, the number of courses is limited and the focus is on business applications. The new B.S. in Information Sciences is much broader in its offerings and will be relevant for students working in any segment of our society, not only the private sector. For example, I can envision career paths in government, NGO's, non-profits, education and others.

Jeff Brown (dean of the College) and I would like students in the BS in Information Sciences to have the opportunity to pursue a business minor. I have mentioned this to Dean Renear.

To reiterate, I am supportive of this new degree program.

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

Department of Communication  
College of Liberal Arts and Sciences  
3001 Lincoln Hall  
702 South Wright Street  
Urbana, IL 61801



March 25, 2018

To: Gay Miller, Chair Senate Committee on Educational Policy

From: John Caughlin

I write in reference to the proposed Bachelor of Science in Information Sciences. Dean Allen Renear and Executive Associate Dean Linda Smith asked me to review the proposal with a specific focus on whether it was sufficiently distinctive from the existing major in Communication. To help me assess this question, I consulted with Executive Associate Dean David Tewksbury and Associate Dean Kelly Ritter from LAS, and we had two meetings with members of the School of Information Sciences to discuss potential overlaps. In response to questions we had about potential points of confusion, the proposal was revised to clarify the distinct focus of the proposed degree. I believe the current version is sufficiently free of overlap with the Communication major to avoid confusion among students.

Additionally, my sense is that the proposed major would serve a group of students who are not currently well-served by existing programs on campus. Thus, I have no objections to the creation of the proposed major. It will be a good addition to the undergraduate offerings at Illinois.

Sincerely,

A handwritten signature in cursive script that reads "John P. Caughlin".

John P. Caughlin  
Professor and Head



UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

Department of Computer Science

201 N. Goodwin Avenue  
Urbana, IL 61801.



Vikram S. Adve  
Professor and Interim Head of Department  
2248 Siebel Center  
217-300-3575  
vadve@illinois.edu

September 17, 2017

*To Whom it May Concern:*

I am writing in support of the proposed new Bachelor's degree from the School of Information Sciences (iSchool) entitled "Bachelor of Science in Information Sciences." Dean Allen Renear, Executive Associate Dean Linda Smith, and their staff in the iSchool have defined a strong program of study that fills an important need for a human-centered undergraduate degree in the broad area of information sciences and management. They have worked closely with members of the Department of Computer Science (CS) to define a program that is complementary to the various undergraduate degrees already offered by Computer Science. In particular, the proposed degree emphasizes the people-centric, social and managerial aspects of information while the various Computer Science degrees (including the CS+X variants) emphasize the theory, systems and applications of computing.

Because of the different focus of the two degrees and differences in the required skill set of graduating students, the majors will lead to very different employment opportunities. The proposed iSchool degree will prepare students for jobs such as instruction coordinators, data curation specialists, computer and information systems managers, and others, while the Computer Science degrees address computation-focused jobs such as systems programmers, network systems designers, information security specialists and others. We believe it is very important *for advisors from both units to ensure* that students and parents understand the distinctions between the near-term job prospects and career paths made possible by the different majors, and Dean Renear has agreed to work with us to ensure that the advisors fulfill this responsibility.

Overall, the proposed degree will fill an important gap in the set of information-related degrees at this University. In fact, I believe that a section of CS students interested in learning about the human-centered and managerial aspects of information will benefit from some of the courses offered by this degree. We support this proposal, and look forward to continuing to work with the iSchool to ensure its long-term success.

Sincerely,

A handwritten signature in black ink, appearing to read 'V. Adve', written over a horizontal line.

Vikram S. Adve, Professor and University Scholar  
Interim Head of Department  
Department of Computer Science  
University of Illinois at Urbana-Champaign

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

College of Business  
Office of the Dean  
260 Wohlers Hall  
1206 South Sixth Street  
Champaign, IL 61820-6980



To: Allen Rencar, Dean, School of Information Sciences  
From: Jeffrey R. Brown, Dean, College of Business  
Date: October 10, 2016  
Re: Proposal to establish a new bachelor of science in information sciences

Dean Rencar:

I am writing to express my support for the establishment of a new B.S. degree in information sciences to be offered by the School of Information Sciences. This is an exciting new degree option for undergraduate students who are interested in learning about how the information sciences can be applied to solve a broad range of economic and social problems. Based on my extensive interaction with employers who recruit heavily from the U of I College of Business, I am confident that students who earn the degree you are proposing will have numerous career opportunities.

In addition to being a desirable degree for students and employers, I believe this degree will further enhance our University's leadership and reputation in the information sciences, including data science, areas of expertise that have positive intellectual and research spillovers across nearly every unit on this campus.

Importantly, this degree does not duplicate any existing degrees. To the contrary, this appears to fill a gap in our line-up and is likely to attract new applicants to our campus who might not otherwise apply. And given the School of Information Sciences national reputation in this field, I am confident that you will be able to deliver a high quality degree that maintains or even enhances the reputation of an Illinois undergraduate degree.

On behalf of the College of Business, I am excited about this degree, and the possibilities that it creates for increased collaboration across our two units. I would love to explore collaborations in research, teaching, and degree programs going forward.

Best of luck with this exciting new program.

Sincerely,

A handwritten signature in black ink, appearing to read 'JRB'.

Jeff Brown  
Josef and Margot Lakonishok Endowed Professor and Dean

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN



**University Library**

Office of the University Librarian  
230 Main Library  
1408 West Gregory Drive  
Urbana, IL 61801

December 6, 2017

Allen Renear  
Dean and Professor  
Illinois School of Information Sciences  
501 East Daniel Street  
M/C 493  
Champaign, Illinois 61820

Dear Allen:

Thank you for providing the University Library with the opportunity to review the School of Information Sciences' proposal to the Senate's Committee on Educational Policy to establish a new Bachelor of Science in Information Sciences. Based upon the proposal that we reviewed, we conclude that there will be no substantive impact on existing library resources: we have both the library materials and personnel to support this program. Resources that we are already acquiring with funds that support studies in the iSchool, and the College of Engineering, and, in some cases, the College of Business provide a firm foundation upon which to support curricular needs for this program.

When this proposal was initially discussed in the Library, Interim Provost Wilkin noted that he was excited by the prospect of the addition of this program to the iSchool. The University Library and the iSchool have a long history of working closely together. During earlier exchanges about this program, he indicated that 'I have every confidence that we will be able to work together to meet the needs of the students in this program. The profession and our own Library will benefit from the addition of the program, and the opportunities for iSchool with the University Library as "lab" are powerful.'

We all look forward to collaborating with you on this endeavor.

Best,

William H. Mischo  
Acting Dean of Libraries and University Librarian  
Berthold Family Professor in Information Access and Discovery

e-c: Tom Teper  
Dan Tracy

## Appendix E: Comparable Programs at Peer Institutions

**Rutgers University**, School of Communication & Information, B.S. in Information Technology and Informatics, 39 credits. (<https://comminfo.rutgers.edu/academics/undergraduate/information-technology-and-informatics-major>)

“The ITI major teaches students how to evaluate, implement, use and manage information technologies for most organizations and corporations. The knowledge gained by our graduates places them in reach of many careers.”

“The ITI major unites theories drawn from the humanities and social sciences with practical computer-based competencies. This program prepares students to work in a diverse and highly competitive technological marketplace that demands individuals who understand the social, economic, and organizational impacts of technology locally, nationally and globally.”

The major consists of 39 credits including the SC&I Interdisciplinary Requirement and 4 core courses.

### *SC&I Interdisciplinary Requirement*

04:189:101 Introduction to Communication and Information Systems and Processes

or

04:189:102 Introduction to Media

### *Core Courses*

- 04:547:200 Social Informatics
- 04:547:201 Introduction to Computer Concepts
- 04:547:202 Object-Oriented Programming
- 04:547:210 Management of Technological Organizations

The remainder of the major consists of 7 elective courses. Suggested concentrations include:

- Analytics Management
- Cybersecurity
- User Experience Design
- Management
- Web Design
- Information System Designers/Developers
- IT Project Management
- Help Desk Analyst
- Knowledge Management
- Instructional Technology/Training
- E-commerce/E-business

**Syracuse University**, School of Information Studies, B.S. in Information Management & Technology, 39-40 credits (<https://ischool.syr.edu/academics/undergraduate/bs-information-management-technology/>)

The program “provides a broad introduction to information management, services, and technologies, coupled with a firm foundation steeped in coursework from the liberal arts and sciences. Students learn the most effective ways to find information, assess people’s technology needs, and design and manage systems that meet those needs.”<sup>1</sup>

There are six concentrations:

- Information Security Management
- Project Management
- Network and Systems Management
- Web Design and Management
- Database Management
- Digital Retail Strategies

The major consists of 39-40 credits of which 24-25 are the Primary Core:

Introductory Courses:

- IST 101 - Freshman Forum (first-year students only) or
- IST 200 - Selected Topics Transfer Student Forum (1 credit) (external transfer students only)
- IST 195 - Information Technologies

Technology Courses:

- IST 233 - Introduction to Computer Networking
- IST 346 - Information Technology Management and Administration
- IST 359 - Introduction to Database Management Systems

Management Courses:

- IST 335 - Introduction to Information-Based Organizations
- IST 345 - Managing Information Systems Projects
- IST 352 - Information Analysis of Organizational Systems
- IST 466 - Prof Issues/Info Mgmt & Tech

The remaining 15 credits consist of electives including up to two concentrations.

**University of North Carolina**, School of Information and Library Science, Bachelor of Science in Information Science, 48 credits <https://sils.unc.edu/programs/undergraduate/bsis>

“As an information science major, you’ll study the creation and management of information content, the characteristics and needs of people who create, consume, and utilize information, and the technologies that support the creation, management, preservation, and dissemination of information.”

The degree consists of 4 prerequisite courses, 4 core courses, and 6 electives.

*Approaches and Connections Requirements (Prerequisites)*

- *Physical and Life Sciences*  
PSYC 101, General Psychology

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<sup>1</sup> [http://coursecatalog.syr.edu/preview\\_program.php?catoid=13&poid=6717](http://coursecatalog.syr.edu/preview_program.php?catoid=13&poid=6717)

- *Social and Behavioral Sciences*  
INLS 201, Foundations of Information Science
- *Quantitative Reasoning*  
COMP 110, Introduction to Programming, **OR**  
COMP 116, Introduction to Scientific Programming

*Information Tools Literacy*

- INLS 161, Information Tools

*Core Requirements*

- INLS 382, Information Systems Analysis and Design
- INLS 385, Information Use for Organizational Effectiveness
- INLS 523, Database Concepts and Applications
- INLS 697, Emerging Topics in Information Science (taken in the senior year)

There are 7 suggested concentrations:

- Data Analysis
- Data Storage & Retrieval
- Digital Cultural Heritage
- Geographic Information Systems
- Human-Computer Interaction Design
- Web Design
- Preparation for Graduate Study

**University of Washington**, Information School, B.S. in Informatics, 94-99 credits (Washington operates on quarters) (<https://ischool.uw.edu/programs/informatics/curriculum>)

“The Informatics major was designed to be conceptual and practical, academic and professional, and focused on the human and humanistic dimensions of the design and use of information systems.”

The degree consists of three sets of courses: lower-division requirements, core courses, and concentrations/transcriptable options. There are three concentration areas: human-computer interaction, information architecture, information assurance and cybersecurity

*Lower-Division Requirements*

- INFO 200 Intellectual Foundations of Informatics
- CSE 142 Computer Programming I
- STAT 311 Elements of Statistical Methods OR QMETH 201 Introduction to Statistical Methods
- English Composition
- I&S (Individuals and Societies) course

*Core Courses*

- CSE 143 Computer Programming II
- CSE 373 Data Structures and Algorithms
- INFO 340 Database Management and Information Retrieval
- INFO 343 Web Technologies
- INFO 360 Design Thinking

- INFO 380 Information Systems Analysis and Management
- INFO 450 Information Ethics and Policy
- INFO 470 Research Methods
- INFO 481 Project Management
- INFO 490 Capstone Project I
- INFO 491 Capstone Project II

*Concentrations/Transcriptable Options*

In addition to the base Bachelor of Science in Informatics degree, a student may choose the following options to complete and have that option noted on the UW transcript.

- Data science
- Human-computer interaction
- Information architecture
- Information assurance and cybersecurity

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

Department of Media & Cinema Studies

College of Media  
119 Gregory Hall, MC-462  
810 South Wright Street  
Urbana, IL 61801



April 20, 2018

To: Gay Miller, Chair Senate Committee on Educational Policy

From: CL Cole

The Department of Media and Cinema Studies was asked to review the proposed Bachelor of Science in Information Sciences for potential areas of overlap. The proposal was reviewed by the MACS Advisory Committee, and at the request of the committee, by MACS faculty member Veronica Paredes, whose expertise was deemed useful to the review. Anita Say Chan (representing the MACS Advisory Committee), Veronica Paredes, and I met with representatives of the School of Information Sciences (Executive Associate Dean Linda Smith and Emily Knox) to discuss several minor concerns raised during our review of the proposal. After our conversation with Professors Smith and Knox, we believe that the proposed major offers multiple points of productive convergence with MACS and no serious overlaps.

In 2017, MACS launched its new major, based on a three-year comprehensive review and major redesign of the undergraduate curriculum. By rethinking student needs in the context of a rapidly changing industry, we streamlined our core and created highly flexible thematic pathways—creating one of the most unique undergraduate experiences at UIUC. We see the pathways model as a much-needed development in higher education, and believe that another degree based on a pathways model will enhance the undergraduate experience at UIUC.

Sincerely,

CL Cole, PhD  
Department Head, Media & Cinema Studies  
Professor, Media & Cinema Studies, Gender & Women's Studies,



UNIVERSITY OF ILLINOIS  
AT URBANA - CHAMPAIGN

School of Information Sciences  
501 East Daniel Street  
Champaign, Illinois 61820-6211



December 5, 2017

Kathy Martensen  
Assistant Provost for Educational Programs  
Office of the Provost and Vice Chancellor for Academic Affairs  
207 Swanlund Administration Building  
MC-304

Dear Kathy:

The faculty of the School of Information Sciences has voted to approve the following proposal:

**Establish a New Bachelor of Science in Information Sciences in the School of Information Sciences**

Please address all correspondence concerning this proposal to me. This proposal is now ready for review by the Senate Educational Policy Committee for proposed implementation in Fall 2018.

Sincerely,

A handwritten signature in cursive script that reads "Linda C. Smith".

Linda C. Smith  
Executive Associate Dean

UNIVERSITY OF ILLINOIS  
AT URBANA - CHAMPAIGN

EP.18.31

Office of the Provost and Vice Chancellor for Academic  
Affairs

Swanlund Administration Building  
601 East John Street  
Champaign, IL 61820



December 8, 2017

Gay Miller, Chair  
Senate Committee on Educational Policy  
Office of the Senate  
228 English Building, MC-461

Dear Professor Miller:

Enclosed is a copy of a proposal from the School of Information Sciences to establish the Bachelor of Science in Information Sciences.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Kathryn A. Martensen'.

Kathryn A. Martensen  
Assistant Provost

Enclosures

c: A. Renear  
L. Smith  
A. Edwards  
E. Stuby