

## ***Information Architecture and Knowledge Management***

Institutional memory... Information design... Intranet and Internet... Information is power — but only if it is readily accessible, organized, analyzed and displayed to solve the information need. Just as an architect designs a structure to compliment the environment and needs of his client, the Master of Science program in Information Architecture and Knowledge Management prepares information professionals to develop and manage information interfaces, products, systems and services for specific information ecologies.

### ***About IAKM***

With the rapid evolution of the information society, facilitated by the emergence and explosion of digital information and electronic networks, there has been tremendous growth in the information-related disciplines. At the same time, there has been a convergence of the activities of these disciplines in electronic information and a need for information professionals who span many fields or who are establishing new roles in information-intensive organizations.

Kent State University recognizes this growth both within and across disciplines. It is the latter need for transdisciplinary and multidisciplinary information professionals that led to the creation of the Master of Science in Information Architecture and Knowledge Management. Information Architecture and Knowledge Management are two identifiable roles on a spectrum of careers of emerging information professionals, which this degree anticipates. This degree program is designed to be nimble and flexible, but rigorous: nimble and flexible through the program's continually keeping abreast of current and emerging information skills, technologies and education, yet rigorous so that graduates are equipped to assume important positions in an organization.

It is administered by the School of Library and Information Science. In addition to the major participants (Communication Studies, Journalism and Mass Communication, Library and Information Science, Management & Information Systems, Mathematics and Computer Science, and Visual Communication Design) other disciplines are participating in this program. The Department of Economics is offering a core course on the Economics of Information, but courses are available in other graduate programs throughout the University.

### ***IAKM Program***

To obtain the Master of Science degree students must take the core program and elect a concentration. All students are required to take an 8-course, 24-credit core. The program's core courses provide a cross-section of the information-related disciplines.

Three program concentrations offer flexibility for students to tailor-make a course of study to suit their interests or career objectives. This flexibility is essential to the nature of the program because of the transdisciplinary character of information, the emerging and evolving roles for information professionals, and the rapid and dynamic growth of information technologies, products, systems, services and networks. Students will be expected to take four (4) courses in one concentration, plus three (3) courses from the other concentrations (at least one from each of the other two), plus a Thesis or a Master's Project for a total of 24 credits in the following concentrations.

Information Architecture

Information Use

Knowledge Management

## ***Core Program***

All students are required to take an eight-course, 24-credit core, providing an overview of the information-related professions and of information processes and products, and information-technology research. The core will emphasize the collaboration of intellectual and computer-based technologies, the importance of the user perspective, professional standards and the role of research. The IAKM core provides competencies in the following areas:

- intellectual technologies, such as knowledge organization, packaging and repurposing
- information technologies, such as hardware and software applications
- knowledge of information users, uses and needs
- knowledge of information-intensive contexts such as business and government
- knowledge of information processes such as strategic planning and project management.

Requirements of the core program are as follows:

<u>Course</u>	<u>Credits</u>	<u>Course Name</u>
IAKM 60001	3	Information Architecture and Knowledge Management I
IAKM 60002	3	Information Architecture and Knowledge Management II
IAKM 60003	3	Information Design in the Digital Age
CS 61001	3	Structure of Computer Science
IAKM 60005	3	Information Technologies
IAKM 60006	3	Strategic Information Management
ECON 62015	3	Economics of Information

**Plus choose one of the following:**

ECON 64004	3	Quantitative Methods in Business Administration I
BAD 64010	3	Quantitative Methods in Business Administration II
COMM 65020	3	Research Methods in Communication
JMC 60007	3	Research Methods in Mass Communication
LSCI 60604	3	Research for Decision Making in Libraries and Information Centers

Based on the applicant's education and/or experience and providing appropriate and adequate evidence, he or she may petition to substitute one or more of the core courses with elective(s). Courses equivalent to core courses may be substituted with the approval of the Program Director and the student's advisor. Cognate and elective courses in related departments must be selected and approved by the Program Director and the student's advisor. Students are expected to develop a course of study in conjunction with their advisor that will realize their career objectives.

## ***Information Architecture***

Information Architecture is the art and science of organizing information and interfaces to information seekers solve their information needs efficiently and effectively, primarily within networked and web-based environments.

Given a particular information user population, there are many information structures that could be deployed to provide efficient and easy access to information or information sources.

For such an information-seeking space, the information architect designs and implements a specific system and interface, based on organizational and environmental requirements and aesthetic and usability considerations, similar to the ways an architect deploys a building in physical space, rooted in aesthetic and functional goals and environmental factors.

Information Architecture has two interrelated aspects: (1) the use of graphic or multimedia design to facilitate communication; and (2) the use of intellectual technologies, such as site and content organization, needs analysis, usability studies, metadata application, and programming to make an information interface or source easy to locate, comprehend, navigate and use.

According to Argus Associates, Information Architecture "involves the design of organization, labeling, navigation, and indexing systems to support both browsing and searching. It plays a central role in determining whether users can easily find the information they need."

The phrase was invented by Richard Saul Wurman, a philosopher of information and communication. He characterized it as the practice of making information understandable and delivering it in a manner that conveys the intended meaning. He saw it as a way of alleviating "information anxiety," the state in which the information seeker has information undersupply or overload or finds it difficult to cope during the process of solving his or her information needs.

Information Architecture builds a synergy of intellectual technologies with information technologies in realizing the goals and objectives of information systems in organizations. Knowledge organization, creation of metadata, graphics design, navigation structures, information needs analysis, effective communication, and other intellectual technologies are employed to inform the deployment of such information technologies as web design, user interfaces, digital libraries, database systems, telecommunications and networking, or collaborative computer environments.

The skills required of an Information Architect are multidisciplinary, involving an understanding of organizations, visual design, information organization, content packaging, and communication.

## ***Information Architecture Curriculum***

The Master of Science in Information Architecture requires 24 credits additional to the core: 4 courses (12 credits) in the chosen area of concentration, 3 courses outside the concentration (at least one from each of the other areas), plus at least 3 credits in a Thesis or Master's Project.

<b><u>Course</u></b>	<b><u>Credits</u></b>	<b>Select four of the following:</b> <b><u>Course Name</u></b>
ART 53005	3	Web Design and Programming I
ART 53006	3	Web Design and Programming II
ART 53701	3	Information Graphics
BAD 64007	3	Information Technology
BAD 64011	3	Systems Simulation
BAD 64042	3	Management Information Systems
BAD 64045	3	System Development Methodologies
BAD 64046	3	Seminar in Computer-Supported Collaborative Work
BAD 64078	3	Emerging Information Systems Technologies
BAD 64080	3	Emerging Hardware and Software Technologies
BAD 64081	3	Data Communications and Networking in Business
BAD 64096	3	Database Management Systems
BAD 64281	3	Interpersonal Behavior
BAD 64285	3	Managing High Technology
CS 55201	3	Computer Communications Networks
CS 57105	3	Web Design and Programming I
CS 57106	3	Web Design and Programming II
LSCI 60640	3	Library Automation
LSCI 60641	3	Information Storage and Retrieval Systems
LSCI 60643	3	Online Reference Services
LSCI 60646	3	User Interfaces for Information Retrieval Systems
LSCI 60647	3	Network and Software Resources for Information Systems

LSCI 61095	3	Topics: Database Systems
LSCI 61095	3	Topics: Electronic Publishing on the Web
LSCI 61095	3	Topics: Implementation of Information Storage and Retrieval Systems

**All students must select one of the following:**

IAKM 61199: Thesis I (2-6) and IAKM 61299: Thesis II (1-2) (if appropriate)

OR

IAKM 60198: Master's Project (3)

## *Information Use*

Information-seeking success occurs when an information user gets the right information at the right place at the right time to the right extent at the right level and to the right amount. In this concentration, information ergonomics is key: adapting the information system or sources to fit the environment of users and their information needs so as to achieve goals of maximum access, usability, efficiency and effectiveness.

Information use is defined by an information environment. Information environments are systems of information users and uses, technologies, sources, processes and practices in a particular organizational or cultural context. They vary in variety, evolve and interact with each other and within a larger organizational, social or cultural context. As information environments they are one component in an ecosystem, a dynamically interconnected set of organizational, social and cultural systems.

While there are many topics that one could cluster under the notion of Information Use, the concentration focuses on four key areas: (1) users, their needs and experience; (2) communication processes and strategies within and across organizations and systems; (3) information content creation, development and deployment; and (4) the interoperability of information systems for the sharing of knowledge. To create an effective environment for information use, students must acquire skills and knowledge in these various dimensions of information ergonomics.

(1) Users, their needs and experience. A variety of users come to information systems: their variety, their needs, their behavior and the uses to which they put information must be understood. The inclusion of the user perspective and the analysis of user experience is critical to designing and deploying effective and efficient information systems. So too are the usability of systems, interfaces, and information content.

(2) Communication processes and strategies within and across organizations and systems. Effective and efficient communication is an essential for successful information environments and for success within the larger cultural or organizational environment in such areas as (a) communication among system designers, users and organizational stakeholders in information system development; (b) the creation of effective virtual teams or communities or other collaborative work environments; (c) the role of information media in communicating the message or developing a community – effective online communication requires an understanding of the technical, social, organizational and cultural uses of email, multimedia, instant messaging, and other online media; and (d) information policies, standards, strategy, politics, ethics, behavior and culture.

(3) Information content creation, development and deployment. Content, particularly e-content for webpages, must be created. Such creation may require a variety of value-added processes, such as information analysis, synthesis, organization, abstracting, design, thesaurus construction, reutilization or resourcing. Information may be developed for a particular purpose, e.g. competitive intelligence, for a particular audience, e.g. engineers, or for a particular context, e.g., webpages. It may be packaged or repurposed (e.g., by taking original material and reworking it to serve additional purposes such as another audience or another hardware device (e.g., an electronic book). It can be stored in digital libraries, the repositories of diverse content, for which electronic access will serve democratic, cultural and/or economic development.

(4) Interoperability of information systems for the sharing of knowledge. Information systems require common standards, not only in terms of the technologies, but also in terms of access to content. Frameworks for such intersystem interconnectivity (e.g., Resource Definition Framework) require standardized meta-information associated with the resources: metatags (e.g., the Dublin Core), common markup standards (e.g., XML) and common ontologies. Ontologies in this context, while a term borrowed from philosophy, are derived from work in artificial intelligence. They are consistent

and controlled descriptions attached to a source, such as a document, of the concepts and relationships that can be used by human or software agents or a community of them. Ontologies establish a common terminology among members of a community, such as a subject domain (e.g., liquid crystals research). To represent a conceptualization a representation language is needed. In traditional information work, cataloging and indexing have used ontologies for knowledge representation. For flexible interaction among electronic sources, a more dynamic representation is required. The purpose of such ontologies is to enable knowledge sharing and reuse.

Several of these foci are concerns of the participating disciplines, but many, if not most, are transdisciplinary or interdisciplinary concerns – particularly as they are content- and user-access-driven and not technology-driven. Any of these, users and user experience, communication processes and strategies, information content creation or systems interoperability, can only be fully understood as aspects of dynamic information environments within a social, cultural or organizational context.

## ***Information Use Curriculum***

The Master of Science in Information Use requires 24 credits additional to the core: 4 courses (12 credits) in the chosen area of concentration, 3 courses outside the concentration (at least one from each of the other areas), plus at least 3 credits in a Thesis or Master's Project.

### **Select four of the following:**

<b><u>Course</u></b>	<b><u>Credits</u></b>	<b><u>Course Name</u></b>
COMM 65670	3	Interpersonal Communication
COMM 65690	3	Seminar: Communication Theory
COMM 65690	3	Seminar: Media Effects
COMM 65690	3	Seminar: Personal and Mediated Communication
COMM 65851	3	Seminar: Communication in an Information Society
JMC 50004	3	Computer Assisted Reporting
JMC 50012	3	Online Journalism
JMC 50015	3	Media Management
JMC 60002	3	Legal Problems in Mass Communication
JMC 60003	3	Seminar: Ethics of Mass Communication
JMC 60009	3	Seminar in Social Role of the Mass Media
JMC 60015	3	Advanced Media Management
JMC 66020	3	Precision Journalism
LSCI 60613	3	Information Uses and Services
LSCI 60643	3	Online Reference Services
LSCI 60644	3	Information Science
LSCI 60649	3	Indexing and Abstracting
LSCI 60650	3	Information Policy
LSCI 60666	3	Ethical Concerns of Library and Information Professionals
PSYC 60453	3	Introduction to Cognitive Psychology
SOC 62540	3	Social Organization
SOC 62542	3	Sociology of Work

### **All students must select one of the following:**

IAKM 61199: Thesis I (2-6) and IAKM 61299: Thesis II (1-2) (if appropriate)

OR

IAKM 60198: Master's Project (3)

## ***Knowledge Management***

Knowledge Management is a discipline that takes a comprehensive, systematic approach to the information assets of an organization by identifying, capturing, collecting, organizing, indexing, storing, integrating, retrieving and sharing them. Such assets include (a) the explicit knowledge such as databases, documents, environmental knowledge, policies, procedures and organizational culture; and (b) the tacit knowledge of its employees, their expertise, and their practical work

experience. It strives to make the collective knowledge, information and experience of the organization available to individual employees for their use and to motivate them contribute their knowledge to the collective assets.

Knowledge Management has two facets: (1) planning, capturing, organizing, interconnecting and providing access to organizational intellectual capital through such intellectual technologies as document markup, thesaurus construction or needs analysis and (2) directing or supervising such assets and those that are involved in these processes. These facets may be integrated into a single role or divided among several roles in an organization.

Knowledge management has many aspects: the conversion of the latent or tacit knowledge of its employees into articulated knowledge; the extraction of new knowledge from existing data stores through data mining; the recovery of knowledge lost in complex and diverse systems; the organization and structure of knowledge for efficient storage and retrieval; the exploitation of environmental knowledge for competitive intelligence; the coordination and integration of the content of information systems, activities and environments; and the capture of knowledge-how, procedural knowledge, in addition to knowledge-about, factual knowledge in organizations.

Knowledge Management is thus a strategy that turns an organization's intellectual assets including its recorded information, its memory, and the expertise of its employees into greater productivity and increased competitiveness.

The education and training of the Knowledge Manager must be interdisciplinary in nature. He/she must have knowledge of and skills in: organizations, particularly business, communication processes and strategies, the organization of intellectual assets, information needs analysis and inventories, methods of eliciting tacit knowledge and information capture, knowledge dissemination and packaging, information standards, policies and procedures.

## ***Knowledge Management Curriculum***

The Master of Science in Information Use requires 24 credits additional to the core: 4 courses (12 credits) in the chosen area of concentration, 3 courses outside the concentration (at least one from each of the other areas), plus at least 3 credits in a Thesis or Master's Project.

### **Select four of the following:**

<b><u>Course</u></b>	<b><u>Credits</u></b>	<b><u>Course Name</u></b>
BAD 64042	3	Management Information Systems
BAD 64081	3	Data Communications and Networking in Business
BAD 64096	3	Data Base Management Systems
BAD 64285	3	Managing High Technology
COMM 65851	3	Organizational Communication
IAKM 60010	3	Organizational Knowledge Management
JMC 50015	3	Media Management
JMC 60015	3	Advanced Media Management
LSCI 60610	3	Library Management
LSCI 60650	3	Information Policy
POL 60000	3	Public Policy Development
POL 60001	3	Public Policy Delivery
POL 68091	3	Managing Conflict and Consensus

### **All students must select one of the following:**

IAKM 61199: Thesis I (2-6) and IAKM 61299: Thesis II (1-2) (if appropriate)

OR

IAKM 60198: Master's Project (3)

## ***Master's Thesis Option***

This option is recommended for those students interested in pursuing research or doctoral work. The thesis topic must be approved by the program and filed with the graduate dean no later than the semester preceding that in which the candidate expects to receive the degree. The topic should be one that will further the student's educational development by exercising research or other skills that will help the student keep abreast of the field and enable the student to pursue independent work. The thesis topic is formulated by the student in consultation with the adviser and submitted to the program for approval according to normal program procedures.

The thesis must be completed and in the hands of the examining committee no later than eight weeks before commencement. After the thesis has been accepted by the examining committee and after the candidate has passed the oral examination, two copies of the final, letter-perfect thesis are prepared and submitted to the appropriate graduate office. Two copies of an abstract of not more than 400 words are included with the copies of the thesis. Students electing the thesis option should consult the *Guidelines for the Preparation of Theses* for guidance, available in the college offices

Each student writing a thesis is required to register continuously for Thesis I 61199 for a total of 6 credits. A student who has completed the required 6 hours of Thesis I is expected thereafter to register continuously for Thesis II 61299 each semester, including summer, until all degree requirements are met. No more than 6 hours of Thesis I credit may be counted toward completion of degree requirements. The student should make certain that the topic has been approved and must register for thesis writing not later than the last semester the student is in residence. Grades of "S" or "U" are used.

## ***Master's Project Option***

This option is recommended for students seeking employment upon the completion of their degree. For the Master's Project, the student will develop a project in conjunction with the information-related activities of an organization, under the guidance of a site supervisor and an academic advisor. Projects could include creation of a web site for marketing a product or service, a inventory of the information needs of an organization, usability testing of information interface, product or service, applying a knowledge management methodology to elicit the tacit knowledge of employees, creating XML and metatags for a specific context to facilitate efficient and effective information retrieval, or analyzing the communication flows in an organization that promote or hinder the acceptance of an information product, process, system or service. The organization can be suggested by the student or by the advisors in the IAKM Program Office. Companies such as KeyCorp, Lexis -Nexis, and Ernst and Young may provide opportunities for such work.

The objectives of the Master's Project are to enable each IAKM student to:

- complete an independent experience in the context of the information-related activities in an organization
- foster a more in-depth, specialized treatment of a topic or work process than is usual in a formal classroom setting
- work on an information product, technology, system or service so as to gain organizational, practical experience with these aspects of professional work.
- submit a report to his/her on-site and faculty advisors and the program office detailing the nature of the work experience, its methods, process and results.

Evaluation of the project will result in grades of "S" or "U." The evaluation will be made by the faculty advisor with consultation to the site supervisor.

## *Careers*

### **Information Architecture Job Titles**

Information Architect  
 Web Designer  
 User Experience Designer  
 Systems Analyst  
 Web Developer  
 Learning Architect Specialist  
 Information System Developer  
 Information Engineer  
 Architecture Analyst

Lead Architecture Specialist  
 Program Manager  
 System Architect  
 Tech Director  
 Web Content Specialist  
 Senior IT Architect  
 Data Architect  
 Documentation/Configuration Management  
 Senior User Interface Designer

### **Information Use Job Titles**

User Experience Designer  
 Information Developer  
 User Coordinator  
 Program Manager  
 Usability Engineer  
 User Interface Manager  
 Usability Lead  
 Team Systems Manager  
 Senior User Interface Designer  
 Information Analyst  
 Content Analyst  
 Web Content Specialist  
 Documentation/Configuration Management  
 Ontologist

Digital Archivist  
 Records Manager  
 Metadata Coordinator  
 Records Technicians  
 Records Conversion Specialists  
 Records Project Supervisors  
 Micrographic Technicians  
 Archives Technicians  
 Documentation Specialist  
 Content Manager  
 Information Officer  
 Head of Content  
 Internal Communications Manager

### **Knowledge Management Job Titles**

Knowledge Manager  
 Knowledge Engineer  
 Knowledge Project Manager  
 Knowledge Architect  
 Knowledge Analyst  
 Data Analyst  
 Data Manager  
 Operations Coordinator

Knowledge & Content Manager  
 Information/Data Coordinator  
 Documentation/Configuration Manager  
 Information Steward  
 Internal Communications Manager  
 Knowledge Leader  
 Head of Content  
 Information Officer

## *Advising*

Advising in the program is important for success in achieving the student's career or research objectives. Students are recommended to schedule a meeting with the Program Director or Academic Program Officer prior to taking classes. If this is not possible, then such a meeting should occur within the first six credits of courses taken.

Important matters to discuss with advisers include selecting a concentration, selecting courses, choosing between a thesis and a master's project, finding a corporation to sponsor a master's project, approval for course substitution, taking course prerequisites, etc.

Contact the Program Office with advising questions:

Room 331 Library  
 (330) 672-5840 (IAKM Office)  
 (330) 672-2118 (Fax)  
 Email: [iakm@kent.edu](mailto:iakm@kent.edu)

## ***Admission Requirements***

In addition to the regular university application requirements, admission to the Master of Science degree requires the following:

- an undergraduate degree with a minimum 3.0 (A=4) grade point average
- satisfactory scores on the Graduate Record Examination and/or appropriate professional experience  
(The Graduate Record Examination is recommended, because admission is selective and strong scores from the Graduate Record Examination may improve one's standing in the selection process.)
- evidence of computer literacy  
(With respect to computer literacy, in addition to evaluating the computer/information literacy survey included with the application package, an applicant's record and experience will be assessed and if the level of literacy does not appear adequate to the demands of the core course of study, the applicant's advisor will suggest workshops, courses or other appropriate methods for satisfying such background requirements. Credits for such workshops or courses will not apply to the degree.)
- three letters of recommendation from those in a position to evaluate academic performance and graduate potential
- a statement of purpose about how the program will realize the applicant's career and/or research goals
- a university application
- a background knowledge of statistics and economics is highly desirable