INFORMATION & KNOWLEDGE ORGANIZATION
Professional Pathway

Description:
Information & Knowledge Organization (IKO) is concerned with the standards, processes, practices, and associated technologies for the representation, organization, and future access, use, and discoverability of information in any environment.

There are a number of **career paths** within the information organization domain. You can select one or combine more than one to create your plan of study. These include:
- IKO general career pathway
- Specialized career pathways (in alphabetical order):
  - Archival Description
  - Cataloging & Metadata
  - Indexing
  - Metadata Design and Architecture
  - Museum Documentation and Cultural Object Cataloging
  - Taxonomies, Ontologies, and Semantic Analysis

Courses are listed in numeric order by Course number under each category. Make sure to check the Course Catalog (https://catalog.kent.edu/coursesaz/lis/) for course prerequisites.

INFORMATION & KNOWLEDGE ORGANIZATION
– GENERAL CAREER PATHWAY

This first pathway is for those interested in a general IKO career path and is not specific to one environment (e.g., IKO in archives). You may select any number of the courses suggested here. In general, IKO knowledge informs information system and service developers, designers, and managers of the organization of knowledge in all kinds of forms (print, electronic, media), and for all kinds of purposes and information institutions, such as libraries, archives, museums (LAMs), and the Internet. IKO knowledge and skills can help users of LAMs or other information institutions find information and assist them in researching an information need. IKO processes have implications across areas of information research including retrieval, interaction, and personal information management.

REQUIRED MLIS CORE (13 Credit Hours)
Students must complete the core course requirements listed in the Kent State University Catalog Year. For YOUR Catalog Year (CY) and your core course requirements consult your GPS record in Flashline. For program requirements and course descriptions, consult the appropriate Catalog (https://catalog.kent.edu/)

REQUIRED MLIS CORE (13 Credit Hours)		
LIS 60020	Information Organization	3
LIS 60030	People in the Information Ecology	3
LIS 60040	Information Institutions and Professions	3
LIS 60050	Research and Assessment in Library and Information Science	3
LIS 60280	Master's Portfolio in Library and Information Science	1

IKO FOUNDATIONAL (KEY) COURSES (18 CREDIT HOURS) *(prerequisite: LIS 60020)*		
LIS 60602	Resource Description and Access	3
LIS 60603	Subject Analysis Representation and Access	3
LIS 60636	Knowledge Organization Structures, Systems and Services	3
LIS 60637	Metadata Architecture and Implementation	3
LIS 60649	Indexing & Abstracting	3
LIS 60658	Description of Archival Materials	3

IKO RECOMMENDED ELECTIVES (CHOOSE AT LEAST 6 CREDITS)		
LIS 50645	Database Fundamentals for the Information Professional	3
LIS 60510	Digital Technologies I: Data Fundamentals	1
LIS 60511	Digital Technologies II: Internet Fundamentals *(prerequisite: LIS 60510)*	1
LIS 60512	Digital Technologies III: Systems Fundamentals *(prerequisite: LIS 60511)*	1
LIS 60613	Information Needs, Seeking and Use	3
LIS 60635	Cultural Heritage Informatics	3
LIS 60671	Introduction to Cataloging Principles and Practices in Medical Libraries	1
LIS 60692	Internship in Information and Cultural Heritage Institutions	2-3
LIS 60701	Museum Collections *(prerequisite: LIS 60700)*	3

LIS 61095	Special Topics: Linked Data	3
KM 60370	Semantic Analysis Methods and Analysis *(prerequisite: KM 60301)*	3
UX 60001	User Experience Design Principles and Concepts	3
UX 60002	User Experience Design in Practice *(prerequisite: UX 60001)*	3
UX 60101	Information Architecture I *(prerequisite: UX 60001 and UX 60002)*	3

SPECIALIZED CAREER PATHWAYS

Here you will find a brief description of each IKO specialized career, followed by the table with their respective foundational (key) and recommended electives. Areas are listed in alphabetical order.

Archival Description

Information professionals responsible for capturing, collating, analyzing, and organizing any information that serves to identify, manage, locate, and interpret the holdings of archival institutions and explain the contexts and records systems from which those holdings were selected. Professionals in archival description will be familiar with archival description theory and practices, such as provenance, original order, and hierarchical arrangement and description. They will also be familiar with descriptive standards such as Describing Archives, Encoded Archival Description, and Encoded Archival Context for Corporate Bodies, Persons and Families. Additionally, they will also be conversant with related bibliographic and archival standards where applicable, such as Resource Description and Access, MARC, and Dublin Core, and descriptive standards for other types of cultural heritage such as cultural objects, moving image and sound archives, and visual material.

Cataloging & Metadata

Information professionals responsible for the representation of resources of all types in libraries, digital libraries, special collections, and other information settings. This includes the areas of bibliographic and metadata creation; database maintenance; authority work and vocabulary construction; and bibliographic and authority data processing, analysis, and visualizations. Whether cataloging in a library environment or creating metadata in any environment, cataloging and metadata professionals will be familiar with:
- Resource description theory and practices.
- Relevant description standards, such as Resource Description and Access (RDA), Cataloging Cultural Objects (CCO), and Describing Archives: A Content Standard (DACS).
- Metadata schemas, including DCMI Metadata Terms (Dublin Core), Visual Resource Association Core (VRA Core), Encoded Archival Description (EAD), Data Catalog Vocabulary (DCAT), etc.

- Linked data principles.

They will be familiar with categorization, classification, and representation theories, and knowledge organization systems (KOS), including classification schemas, subject vocabularies, name authority files, and genre terminology. In addition, they will be familiar with record structures, frameworks, and encoding schemas, such as MARC 21, BIBFRAME, EAD, VRA, and DCterms, expressed in RDF, XML, and other standard formats.

Indexing

Information professionals who analyze unstructured data (including textual, visual, and audio content) and create structured access to content through application of controlled vocabularies. Indexing defines relationships between concepts and identifying locators to ensure collocation and discoverability of concepts within and between collections of documents. Includes skillful application of specialized software (e.g., Cindex) to automatically perform indexing related tasks.

Metadata Design and Architecture

Information professionals responsible for creating and maintaining the metadata strategy, roadmap, and standards/policies of an institution. These professionals develop the enterprise or academic metadata strategy and architecture. They leverage professional standard practices and solutions to develop, define, and implement:
- Metadata schemas, ontologies, taxonomies, authority files, and other fundamental metadata artifacts and capabilities.
- Policies, guidelines, tools, metrics, and standards for creating, managing, integrating, and transforming metadata.
- Improvements to the metadata strategy, framework, roadmap, and solutions.

They work to establish and quantitatively improve metadata and information management effectiveness within institutions, based on an analysis and understanding of the organization's goals, business needs, enterprise architecture, and current information management solutions. They also contribute to the design and applications of metadata element sets and schemas, data exchange formats, and value vocabularies for distinct domains and information communities, while addressing issues in metadata interoperability, quality control and evaluation, and trends and practices in Linked Data development.

Museum Documentation and Cultural Object Cataloging

Information professionals engaged in describing and documenting works of art, architecture, cultural artifacts, and images of these objects. These professionals are responsible for keeping accurate information about the objects in their care, including items in museum collections, visual resources collections, archives, and libraries, with a primary emphasis on cultural objects. Among other responsibilities, professionals may be inputting data about new acquisitions, researching images for catalogues, developing online guides, working as museum registrar, or collections manager. Documentation is essential to all aspects of a museum's activities. Collections without adequate documentation are not true "museum" collections.

Taxonomies, Ontologies, and Semantic Analysis + Enrichment

Information professionals who design, create, and maintain specific controlled vocabularies and structured taxonomies. These are used for organizing, indexing, and retrieving information with the goal to significantly improve the findability and search experience of an institution's external users and the internal community. In addition, they create knowledge graphs and linked metadata schemes, map metadata, work with linked data, mine for data internally and externally, and collaborate with others on semantic technology projects. These skills and knowledge are applicable to structured data, but also to semi-structured and un-structured data.

FOUNDATIONAL (K) and RECOMMENDED (R) ELECTIVE COURSES

Note: In this table, **Foundational (Key)** courses for one career path may be listed as **Recommended** electives for other career paths and vice versa. Consult with your faculty advisor to design your program of study, for course rotations, and additional coursework if you are interested in specialized collections, such as music, media, medical literature, etc. Check the Course catalog (catalog.kent.edu) for course titles, descriptions, and prerequisites. Other pathways (such as Archival Studies, Museum Studies, etc.) may provide additional course recommendations for those areas. The following focus on IKO in archives, museums, libraries, and semantic web.

SPECIALIZED CAREER PATHS FOUNDATIONAL (K) and RECOMMENDED (R) ELECTIVE COURSES						
Course	Archival Description	Cataloging & Metadata	Indexing	Metadata Design & Architecture	Museum Documentation	Taxonomies, Ontologies & Semantic Analysis + Enrichment
LIS 50645		R	K			
LIS 60510		R	R	K	R	K
LIS 60511		R	R	K	R	K
LIS 60512		R	R	K		R
LIS 60602	R	K		R		
LIS 60603	R	K	K	R	R	R
LIS 60613		R		R		R
LIS 60635			K		K	
LIS 60636		K	K	K	R	K

LIS 60637	K	K	K	K	R	K
LIS 60649	R	R	K	R	R	R
LIS 60652	K					
LIS 60658	K				R	
LIS 60671		R				
LIS 60692	K	K	K	K	R	R
LIS 60701					K	
LIS 61095 Linked Data		K	K	K		K
KM 60370	K		R	K		K
UX 60001	R		R	R	R	R
UX 60002	R		R	R	R	R
UX 60101	R		R	R	R	R

ADDITIONAL INFORMATION

Competencies (knowledge, skills, and aptitudes):

- Knowledge of theories, principles, ethics, and standards for metadata, classification, subject and descriptive cataloging, and knowledge organization.
- Working knowledge of data modeling (conceptual, logical, physical), including data flow diagrams, taxonomic models, metadata management designs, and vocabulary standards.
- Knowledge of information management technologies and systems, including database structures, data structures, data systems and tools, related software, and data management policies and practices.
- Strong understanding of technical environments, their use, tenets, integration, and interactions, including experience working with large complex systems or data solutions.

- Demonstrated applications of conceptual frameworks, standards, and principles of metadata creation. Knowledge of foundational cataloging and metadata principles.
- Knowledge of and experience with metadata creation and concepts, transformation, and management technologies and tools.
- Extensive knowledge of information architecture components, technologies and processes, including taxonomies, ontologies, and controlled vocabularies.
- Knowledge of abstracting and indexing services that aid in the findability, accessibility, interoperability, and reusability of content for a wide audience or specific subject area.
- Understanding and application of Linked Data standards and Semantic Web technologies, such as Resource Description Frameworks (RDF), Web Ontology Language (OWL), Simple Knowledge

Organization System (SKOS), and SPARQL.

- Familiarity and understanding of the application of automated processes in IKO, including artificial intelligence (AI).
- Ability to apply IKO universal standards within the context of local or community needs.
- Knowledge of relevant trends in IKO.
- Strong understanding of user experience principles, concepts, and interactions with information services and systems.
- Organizational and project management skills that reflect an aptitude for complex, analytical, and detailed work, including specialized training for documents and objects when required.
- Good understanding of the research and grant processes, including grant programs outside of the scope of LAMs.
- Demonstrated initiative, adaptability, diplomacy, and constructive problem-solving skills.
- Ability to work with multiple stakeholders across divisions, and with diverse populations.
- Consultative skills and experience with leadership at multiple organizational levels.

Professional organizations:

American Association of Museums (AAM)

American Library Association (ALA):
- Core: Leadership, Infrastructure, Futures
  - Core Metadata and Collections Section
  - Core Technology Section
- Association of College and Research Libraries (ACRL)
  - Rare Books and Manuscripts Section (RBMS)

American Society for Indexing

Association for Information Science and Technology (ASIS&T):
Special Interest Group (SIG):
- Classification Research (CR)
- Knowledge Management (SIG-KM)

Association of Registrars and Collections Specialists (ARCS)

Dublin Core Metadata Initiative (DCMI)

International Committee for Documentation (CIDOC) of the International Council of Museums (ICOM)

International Society for Knowledge Organization (ISKO)
- ISKO Canada and United States (C-US) Chapter

International Federation for Library Associations and Institutions (IFLA):
Sections:
- Cataloguing
- Bibliography
- Subject Analysis and Access
- Audiovisual and Multimedia

- Rare Books and Special Collections
- Serials and other Continuing Resources

Museums Association (MA)

Online Audiovisual Catalogers (OLAC)

Sample job titles:

Archivist
Asset Librarian Cataloger
Business Analyst/Taxonomist
Catalog Indexing Librarian
Cataloger/Archivist
Cataloging and Collection Management Librarian
Cataloging and Metadata Coordinator
Collections Cataloger
Data Architect
Data Taxonomist
Digital Collectors Developer
Digital Content Manager
Digital Project Archivist
Digital Taxonomist (Data Engineer)
Documentation Officer
Electronic Resources & Discovery Librarian
Engineer Taxonomist/Content Specialist
Freelance Indexer
Indexer

Knowledge Engineer (Taxonomist / Ontologist)
Knowledge Manager/Taxonomy
Lead Ontologist
Map Librarian
Metadata Analyst
Metadata Architect
Metadata Librarian
Metadata Specialist
Music and Media Cataloguing Librarian
Ontology Engineer
Principal Cataloger
Semantic and Interoperability Analyst
Special Collections Cataloger
Taxonomist/Metadata Consultant
Taxonomy and Knowledge Management Analyst
Taxonomy Manager
Technical Services Manager
UX Taxonomist – Information Architecture