École des sciences de l'information
School of Information Studies

ISI 5302 Knowledge Organization

Fall 2018, Wednesday 17:30-20:30, Desmarais 8161

COURSE OUTLINE

Professor:	**Stefanie Haustein**
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Office hours:	**Thursday 13:00-14:00 or by appointment**

Course description

ISI5302 KNOWLEDGE ORGANIZATION (3cr.)

Theories, principles, and models underlying the organization of knowledge and the representation of information resources. The course examines various approaches to knowledge organization, drawing on theories based in philosophy, cognitive sciences, linguistics, and other related fields, and explores their application in ontologies, taxonomies, classification systems, indexing languages, folksonomies, and resource description schema.

Course objectives and learning outcomes

Upon completion of this course, students will be able to:

- Understand the theories and principles underlying the organization of knowledge and the relationship of those theories and principles to the ways in which users approach information resources.
- Understand how the principles of knowledge organization and resource description are applied, as illustrated through various types of knowledge organization structures and various approaches to the representation of information resources.
- Apply a variety of methods for organizing knowledge and representing information resources.
- Assess and evaluate the effectiveness of various types of knowledge organization structures.
- Synthesize findings and opinions conveyed in the literature on knowledge organization; cite authorities; and present viewpoints and arguments clearly.

Language of instruction

English

Students may submit their work in either English or French in accordance with the University of Ottawa's Regulation on Bilingualism: http://web5.uottawa.ca/admingov/bilingualism.html

Teaching methods

The course will include presentations by the professor, class discussions and exercises, readings, assignments, group work and a final paper.

Evaluation methods and distribution of grades

Class participation	10%	The participation component of the grade will take into account preparation and active participation in class discussions and activities. Absences from class must be discussed with the professor.
Assignments	30%	
Group work	30%	
Final paper	30%	Deadlines for assignments and the final paper must be respected.
	100%	

Required and recommended readings

Required readings are provided in the course schedule on a weekly basis.

Academic Regulations

Please consult the University of Ottawa's regulations on:

- **Academic Fraud**: http://www.uottawa.ca/about/academic-regulation-14-other-important-information
- **Plagiarism:** http://www.uottawa.ca/vice-president-academic/sites/www.uottawa.ca.vice-president-academic/files/academic-integrity-students-guide.pdf
- **Examinations & Grading**: http://www.uottawa.ca/graduate-studies/students/general-regulations?cat_1=89

Sexual Violence

The University of Ottawa does not tolerate any form of sexual violence. Sexual violence refers to any act of a sexual nature committed without consent, such as rape, sexual harassment or online harassment. The University, as well as student and employee associations, offers a full range of resources and services allowing members of our community to receive information and confidential assistance and providing for a procedure to report an incident or make a complaint. For more information, visit http://www.uottawa.ca/sexual-violence-support-and-prevention

Calendar of activities and evaluations

Class presentations and discussions

Each week focuses on a specific topic related to Knowledge Organization (KO) and includes lectures, class and group discussions, practical exercises and assignments.

Week 1. Organizing knowledge *(05.09.)*

Course scope, learning objectives and requirements; introduction to the field of KO

Recommended reading:

Day, R.E. (2014). *Indexing it all: The subject in the age of documentation, information, and data.* Cambridge, MA: MIT Press. Chapter 1 "Introduction", 1–13.

Hjørland, B. (2016). Knowledge organization (KO). *Knowledge Organization*, *43*(6). 475–484. doi: 10.5771/0943-7444-2016-6-475

Stock, W.G., & Stock, M. (2013). *Handbook of information science*. Berlin: De Gruyter.
Chapter A.1 "What is Information Science", 3–19;
Chapter A.2 "Knowledge and Information", 20–31;
Chapter I.1 "History of Knowledge Organization", 502–518.

Week 2. Knowledge organization on social media *(12.09.)*

Guest speaker: Isabelle Dorsch, Heinrich-Heine-Universität Düsseldorf

Crowdsourced subject indexing and resource discovery; folksonomies; social tagging and tag gardening

Assignment 1: Social Tagging (due 17.09.)

Required reading:

Dorsch, I. (2018). Content description on a mobile sharing service: Hashtags on Instagram. *Journal of Information Science Theory and Practice*, *6*(2), 46–61. doi: 10.1633/JISTaP.2018.6.2.4

Golder, S.A., & Huberman, B.A. (2006). Usage pattern of collaborative tagging systems. *Journal of Information Science*, *32*(2), 198–208. doi: 10.1177/0165551506062337

Recommended reading:

Peters, I. (2009). *Folksonomies*. *Indexing and Retrieval in Web 2.0*. Berlin: De Gruyter Saur.

Week 3. Knowledge networks *(19.09.)*

Social network analysis (SNA) as a bottom-up approach to KO; knowledge maps; document clustering and similarity

Required reading:

Börner, K., Klavans, R., Patek, M., Zoss, A.M., Biberstine, J.R., Light, R.P., Larivière, V., & Boyack, K.W. (2012). Design and update of a classification system: The UCSD map of science. *PLOS ONE*, *7*(7), e39464. doi: 10.1371/journal.pone.0039464

Recommended reading:

Börner, K., Chen, C., & Boyack, K.W. (2003). Visualizing knowledge domains. *Annual Review of Information Science and Technology*, *37*, 179–255. doi: 10.1002/aris.1440370106

Week 4. Citation indexing *(26.09.)*

KO of scientific publications and disciplines; citation indexing as author-based indexing; Science Citation Index and Web of Science

Assignment 2: Citation indexing (due 01.10.)

Required reading:

Garfield, E. (1955). Citation indexes for science: New dimensions in documentation through association of ideas. Science, 122(3159), 108–111. doi: 10.1126/science.122.3159.108

Recommended reading:

Stock, W.G., & Stock, M. (2013). *Handbook of information science*. Berlin: De Gruyter. Chapter M.2 "Citation Indexing", 744–755.

Week 5. Metadata *(03.10.)*

Metadata of different documents; metadata schema; information resource discovery

Assignment 3: Metadata (due 08.10.)

Recommended reading:

Gilliland, A. J. (2008). Setting the stage. In M. Baca (Ed.), *Introduction to metadata*, (Online ed., version 3.0). Retrieved from: http://www.getty.edu/publications/intrometadata/setting-the-stage/

Stock, W.G., & Stock, M. (2013). *Handbook of information science*. Berlin: De Gruyter.
Chapter J.1 "Bibliographic Metadata", 567–585;
Chapter J.2 "Metadata about Objects", 586–597.

Week 6. Aboutness, subjectivity and relevance *(10.10.)*

Guest speaker: Alexandra Haggert (Library and Archives Canada)

Aboutness, subjectivity and relevance in subject indexing; interaction between users and Knowledge Organization Systems (KOSs); automated indexing and abstracting

Assignment 4: Aboutness (due 15.10.)

Recommended reading:

Stock, W.G., & Stock, M. (2013). *Handbook of information science*. Berlin: De Gruyter.
Chapter I.2 "Basic Ideas of Knowledge Representation", 519–530;
Chapter N.1 "Intellectual Indexing", 759–771;
Chapter N.2 "Automatic Indexing", 772–780.

Week 7. Categorization and classification *(17.10.)*

Enumerative and analytico-synthetic classification schemes; Library of Congress Classification (LCC); Dewey Decimal Classification (DDC); Universal Decimal Classification (UDC); Bliss Bibliographic Classification (BC); Colon classification (CC)

Recommended reading:

Jacob, E. K. (2004). Classification and categorization: A difference that makes a difference. *Library Trends, 52*(3), 515–540.

Broughton, V. (2006). The need for a faceted classification as the basis of all methods of information retrieval. *Aslib Proceedings*, *58*(1/2), 49–72. doi:10.1108/00012530610648671

Stock, W.G., & Stock, M. (2013). *Handbook of information science*. Berlin: De Gruyter.
Chapter L.1 "Nomenclature", 635–646;
Chapter L.2 "Classification", 647–674;
Chapter L.5 "Faceted Knowledge Organization Systems", 707–718.

Week 8. Taxonomies, thesauri and ontologies *(31.10.)*

Differences between taxonomies, thesauri and ontologies as KOSs; Linnean taxonomy; Medical Subject Headings (MeSH); Arts and Architecture Thesaurus; Friend of a Friend (FOAF); gazetteers

Required reading:

Stock, W.G., & Stock, M. (2013). *Handbook of information science*. Berlin: De Gruyter.
Chapter L.3 "Thesaurus", 675–696;
Chapter L.4 "Ontology", 697–706.

Recommended reading:

Gilchrist, A. (2003). Thesauri, taxonomies and ontologies: An etymological note. *Journal of Documentation, 59*(1), 7–18. doi:10.1108/00220410310457984

Giménez-Chornet, V., & Escrig-Giménez, M. (2011). Designing a thesaurus to give visibility to the historical archives in the Archivo del Reino in Valencia. *Knowledge Organization*, *38*(2), 154–166.

Milne, C. (2010). Developing information architecture through records management classification techniques. *Aslib Proceedings*, *62*(4/5), 366-386. doi:10.1108/00012531011074636

Week 9. Catalogues *(07.11.)*

Guest speaker: Christine Oliver (uOttawa, Morisset Library)

Organization of the works of authors, artists, composers, filmmakers, etc. in catalogues and bibliographies; Machine Readable Cataloging (MARC); Research Description and Access (RDA); Functional Requirements for Bibliographic Records (FRBR)

Required reading:

Smiraglia, Richard P. (2003). The history of "the work" in the modern catalog. *Cataloging & Classification Quarterly*, *35*(3/4), 553–567. doi: 10.1300/J104v35n03_13

Recommended reading:

Carlyle, A. (2006). Understanding FRBR as a conceptual model: FRBR and the bibliographic universe.*Library Resources & Technical Services, 50*(4), 264-273. doi: 10.5860/lrts.50n4.264

Riva, Pat, Žumer, Maja (2017). The IFLA Library Reference Model, a step toward the Semantic Web. *83rd IFLA World Library and Information Congress*, Wrocław, Poland, 2017. Available at: http://library.ifla.org/1763/1/078-riva-en.pdf

Week 10. Semantic Web and Linked Open Data *(14.11.)*

Guest speaker: Constance Crompton (uOttawa, Department of Communication)

Semantic web; ontologies and Web Ontology Language (OWL); Linked Open Data (LOD); 5-star open document and data scheme; Resource Description Framework (RDF); Internet of Things

Required reading:

Allemang, D., & Hendler, J.A. (2011). *Semantic Web for the Working Ontologist: Modeling in RDF, RDFS and OWL* (2nd ed.), Elsevier. Chapter 1 "What is the Semantic Web?", 1–12.

Brown, S., & Simpson, J. (2013). "The Curious Identity of Michael Field and Its Implications for Humanities Research with the Semantic Web." 2013 IEEE International Conference on Big Data, 2013, pp. 77–85. IEEE: Silicon Valley, CA. doi:10.1109/BigData.2013.6691674.

Week 11. Indigenous and non-traditional organization of knowledge *(21.11.)*

Guest speaker: tba (Xwi7xwa Library)

Indigenous KO; adopting and revising existing KOSs for indigenous KO; Xwi7xwa Classification Scheme and First Nations Names Authority List; Ngā Upoko Tukutuku (Māori Subject Headings)

Week 12. Evaluating and designing Knowledge Organization Systems *(28.11.)*

Group presentations and evaluation of designed KOSs

Assignment 5: Evaluation of KOSs (group project, 28.11.)

Assignments

Assignments need to be submitted via BrightSpace and are due at midnight each Monday after they were assigned. Late submissions are not accepted. Exceptions must be discussed with the professor during or after class when they were provided.

Assignment 1: Social tagging (due 17.09.)
Assignment 2: Citation indexing (due 01.10.)
Assignment 3: Metadata (due 08.10.)
Assignment 4: Aboutness (due 15.10)
Assignment 5: Evaluation of KOSs (group project, 28.11.)

Final Paper

Due: December 5