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**Web site**: www.dsoergel.com/ublis571

### Department of Library and Information Studies. University at Buffalo

UBLIS 571
# Information Organization
### Spring 2016. Calendar / Syllabus

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| **Catalog Description** | Introduces students to the nature and structure of information. It lays the theoretical foundation for understanding and applying a range of concepts and techniques for creating and using traditional, modern, and future information systems, from paper libraries to linked data. It covers the conceptual structures in the organization of data, information, knowledge, language, and text. It introduces major knowledge organization systems (KOS, including classification schemes and thesauri) and metadata systems and guides students in their practical application in cataloging library and other materials, both paper and digital, and in searching many different information sources. The course emphasizes the importance of user requirements in designing information systems. It has students analyze cultural, linguistic, and gender biases that hinder equity of access |
| **Purpose of the course**: prepare for *searching* and for *cataloging* | 1  The course **makes you a better searcher** and **start you off on cataloging** by giving you a fundamental understanding of modern principles of knowledge organization.  2  It **prepares you for advanced courses** and for selecting areas to pursue.  3  It **prepares you  for lifelong learning,** emphasizing not specific skills but concepts that provide the foundation for acquiring a wide range of skills as required by the tasks at hand over a life-time career. It prepares you to become a leader in the field. |
| **General learning objectives** | **Theoretical foundation of all types of information systems**  Acquire the theoretical foundation needed to understand and apply the concepts and techniques to *create and fully use* traditional, modern, and future information systems:  • paper and digital libraries,  • the Web,  • management information systems, content management, intranets, and enterprise portals,  • substantive databases,  • artificial intelligence and expert systems (e.g., for diagnosis). Semantic Web, linked data  Understand the primary conceptual structures that organize data, information, knowledge, language, and text. Often the course will not create full knowledge but open a window into more advanced work. |
| | **User orientation as an essential principle**  Acquire a user-oriented (problem-oriented, request-oriented) approach to the design and operation of information systems. |

**Academic integrity. Disability. Religious observance, see p. ~18**

## Syllabus Table of Contents

# Quick Start Guide

**General**

- This course is about **<u>organization</u>**; it is highly structured. **The organization of the material is a model for principles that I hope you will learn and apply as you present structured information to others,** keeping in mind that not all material is amenable to this highly structured approach**.**

- The material is organized for quick access with three options you can choose from: UBlearns, the course website http://www.dsoergel.com/ublis571/ , and a paper packet.

- The course is organized around **learning objectives** to prepare you for **work as information professionals and leaders in the field in the 21st century.**

- **Be prepared to learn a whole new way of thinking.**

- **Spend time on the course, but on your own schedule.**
  **Course week is W - W.  Work each week:**
  1  Assignments and other activities deepening understanding of the previous week's topics**.**
  2  Readings and lectures and a learning blog on new topics this week**.**

**Lecture materials**

- Designed for individual study by serious adult learners through reading and guided exercises.

- **Important: Keep paper materials organized in ring binders** Use the bookmarks included.

- Many class "sessions" consist of recorded audio lectures; these are divided into segments, each embedded in a PowerPoint slide. Start the audio, pause, and start again from the slide.

- Another type of PowerPoint slides: Step-by-step guide through an "in class" exercise.

**Assignments**

- Assignments are to learn from; **you do not "earn points"; no penalty for late assignments.**

- Assignment feedback is given by letters A, B, C, D, F, but these are not formal grades. **What matters is what you have learned after reading the assignment answer key.**

- To keep up with the course, keep up with the assignments.

- Use the assignment templates to save time ([www.dsoergel.com/ublis571](www.dsoergel.com/ublis571) , top)

**Readings.** Get the gist. Read more carefully if so instructed or if it peaks your interest.

**Grading** based on final exam and term paper, giving more weight to the better of the two.

**Miscellaneous**

   **You are in charge of your learning**. Keep a Learning Blog and **ask lots of questions**.
   **Course notifications will be by email**. Messages archived on UBlearns announcements.
   If you are comfortable with it, please call me Dagobert (Optional: Explanation on p. 5)
   If anything seems wrong or does not work, **ASK** (email TA, email or call the instructor)

| Course material and actions (color refers to paper packet) | Digital (pdf, pptx) | | Paper packet |
| --- | --- | --- | --- |
| | **UBlearns** | **Course website** | |
| **Syllabus and calendar** (with links to materials)<br>• Course introduction material (white)<br>• A two-page overview of course learning objectives and their practical sign (for reference throughout the course) (white)<br>• Calendar and assignments. Semester overview (red)<br>• Weekly calendar sheets and checklist of things to do (red) | X | X | X |
| **Lecture notes**<br>• Weekly dividers: calendar sheets and checklist of things to do repeated (red)<br>• Lecture cover sheets / dividers (pink)<br>    • Learning objectives, • Practical significance, • Lecture outline (for some) | X | X | |
| **Lecture slides / recordings**<br>• Audio lecture broken into segments (one per slide) or guided exercises | X | X | |
| **Assignments**<br>• Assignment cover sheets / dividers (gold)<br>    • Learning objectives, • Materials, • Tasks, • Deliverables<br>• Assignment pages (white) | X | X | |
| Assignment templates | X | X | |
| **Lectures + Assignments supplement.** Elaboration, topic extensions, examples | X | X | |
| **Entire textbook** | X | X | X |
| Individual textbook chapters pdf | X | X | |
| **Readings.**<br>    Weekly dividers (green). Each reading has a cover sheet (white) giving • importance, • reading intensity, • major points, • learning objectives | | | |
|     Required readings | X | X | X |
|     Optional readings | X | X | Some |
| **Learning blog templates** | X | X | |
| **Student introductions** (not on website for privacy) | X | | |
| **Discussion** Set UBlearns to receive posts through email.<br>Can email questions to TA and/or instructor. Emailed questions of general interest posted anonymously to discussion board by the TA | X | | |
| **Course notifications** Sent by email, cumulated on UBlearns | X | | |
| **Private communication with instructor**: email, phone, Skype | | | |
| Assignment submission (UBlearns much preferred, can submit by email) | X | | |
| Assignment returned w/ feedback (UBlearns, email on request) | X | | |
| Assignment answer keys (UBlearns, email on request) | X | | |
| Quizzes, Exams, access, submission, and return (UBlearns or email) | X | | |
| Keeping track of assignment and exam feedback | X | | |
| Term paper submission and return | email | | |

# Lecture 1.1a. General introduction to the course.  (10 min)
Also  audio www.dsoergel.com/ublis571 , Lecture 1.1a audio slides (same text spoken)

Hello. I am Dagobert Soergel and I welcome you to the online course on *Information Organization* .

We talk about organizing information for one purpose and one purpose only: to assist users. The needs of the users are central to what we do. We need to assist users in answering questions and solving problems.

This entails, first of all, assisting users in finding information. Many informational professionals think their job ends there, but that is only half the story. We need to assist users with understanding the information; that means assimilating information, digesting it, and processing it to answer the questions they have and to apply those answers to solve the problem at hand.

We know pretty well how to find information. The new frontier is to assist users in making sense of it. It may be even better to have a system to process all the raw information and provide a ready-made answer that the user can apply directly, taking a lot of work off the user. Or a system that can read a document and extract the pertinent information, so the user does not have to read the entire thing. These advanced user-friendly functions require sophisticated systems, and we will talk about that as part of the course. Lecture 1.2 is about an expert system that processes various kinds of information to decide on drug prescriptions. Later we will talk about systems for information extraction from text

We also organize information to assist students and others with learning. As every educator knows, learning is much more successful if the information to be learned is well structured. We will discuss principles of information design or document design that include structuring information to support learning, that is assimilating information and making sense of it, as I said before.

Finally, many people these days are not just users of information but also producers of information. Some of them are volunteers, like in social tagging; people tag images on Flickr or documents in LibraryThing and so on. They produce information. Many people produce information as part of their job. In many organizations there are people writing many different types of documents, they produce information. We can help them to produce those documents more efficiently, if we understand and organize the structure of these documents. We will talk more, among other things, about document templates that do that. Say you are hired in a company as a librarian. You see they create all these documents but not very efficiently. So you go to management and say "I know a way to produce these documents more efficiently and to make them better structured." It might just happen that you get yourself promoted one level up in the hierarchy of the company in charge of organizing the creation and organized storage of all their information.

This course is not mainly about cataloging. As the first page of the syllabus states: The course will make you a better searcher. It will also start you off on cataloging by giving you a fundamental understanding of modern principles of knowledge organization. Even though in many jobs you will not need to catalog, an understanding the catalog is essential for good searching.

Many think that this course teaches only theory and don't see the connection to practice. It is true that this course has a lot of theory, but as Plato and many after him remarked "Nothing is more practical than a good theory." Now, we could have a course that just talks about the practice of

cataloging books for libraries. All you could do with that course is go in a library and catalog books. But there are so many other things out there that require a good knowledge of how to structure information, how to organize information such as database management or information architecture on the Web. With the course that is being offered, you are going to be prepared to enter any of these; you will have the theoretical base needed to acquire the specific practices and skills needed in the specific area you want to enter. The course provides a basis for lifelong learning for whatever job opportunity you can find or make for yourself in a wide arena.

Part of this course is, as I said, how to present information so it is easily assimilated. I am always working to apply these principles to the course materials, to improve and streamline the presentation with the help of students and TAs. If you can see things that are not clear to you or could be presented better, please let me know. Now, if you tell me "I didn't understand the instructions on the assignments", that by it self doesn't help me. If you tell me "I didn't understand this sentence for this assignment" then I can work on clarifying it. I have worked hard over time to make the assignment instructions clear, but I still get feedback that students do not understand them. Read the assignments before the day they are assigned, and if you have questions email me.

No course is the work of the instructor alone. It is also the work of the students that help with suggestions and comments to each other.

The course is a graduate course so you have to work as graduate students and cope with a graduate student workload. And I hope you will find it interesting enough to find that your effort is repaid in what you learn and what you can do with what you learn and how you can get your mind stretched as we go along. Thinking of structure is not everybody's cup of tea but you will have to learn it, so you have to stretch and we will help you to do that.

You will work with the TA for the course, Amy Miller, and with me. I am very accessible through e-mail; if you have any questions, anytime something is not clear or you do not see how a concept applies to practice, just send me an email message. Some e-mail messages I will answer individually; if I think the answer will be of interest to the entire class I will send the answer to the entire class (without the name of the student who posed the question. I am also available to talk on the phone or by Skype, including eve and weekends; sometimes it is easier to explain something in conversation.

**For Library Media Specialists (School Librarians)**

- As a solo librarian in a school library, you sometimes may need to catalog (even though most of your books should be cataloged centrally).

- More importantly, as a school librarian you need to help your students to become information-literate and to learn how to search. Good searching requires using facets, hierarchy, Boolean operators, and chained searching. How can you teach these concepts if you barely understand them yourself?

- Students need to learn how to organize information and work with it. Frames and templates are important here; they provide one format for graphic organizers, tools that help students work with information and, in a broader sense, to think. Semantic networks underlie another kind of graphic organizers, bubble charts and concept maps; they help students to relate ideas to each other. For this, students need to understand entity-relationship modeling at their level.

- Students need to learn how to present well-reasoned arguments in well-organized papers. Concepts of knowledge organization adapted to an elementary student's or high-school student's understanding, will help with that.

- As a school librarian, you will need to design and/or maintain the school library's website. You may even be asked to be in charge of the website for the school. This is not mainly a matter of HTML or using Dreamweaver. It is a matter of deciding what information and other elements (a place to submit comments, for example) are most important and how to arrange these elements clearly on the page.

- School librarians should also be able to assist with problems of information management in the school, for example, making sure there is a computer system that supports creating lesson plans using a template that is standardized for the school. As the school librarian could be the *School Information Office*r.

**Optional** Only if you need more elaboration on the course materials, continue with

## Lecture 1.1b. Overview of the course and course materials (25 min)

Download Lecture 1.1b audio slides from UBlearns or www.dsoergel.com/ublis571.
Have all course materials received so far and the textbook handy.
Turn to page 1 (the course title page) and start the slides.

**Now you are ready to start with the Lecture Notes**

**required**                                    **Course learning objectives**

True learning results in changes in what you know, understand, or are able to do; *learning objectives* specify what changes should take place in the learner, *learning outcomes* are the changes actually achieved. Learning objectives are specified for every lecture, assignment, and reading; you can check your  learning against them (for example through a learning blog). All course learning objectives are compiled in one large document
*Learning objectives for programs leading to the MLS and related degrees: A detailed list*
(http://www.dsoergel.com/UBLIS571DS-00.0-8CourseLearningObjectivesInContext.pdf).
This document started as a list of program-level objectives integrating a number of professional standards; objectives specific to UBLIS 571 and some other individual courses, down to individual lectures, have been added. In this document, **the numbers for learning objectives all start with P**. Included in the course materials is a shorter version that includes program learning objectives at a broad level and all UBLIS 571 learning objectives.  XXX check where

**required**                                    **Broad course learning objectives**

   These learning objectives fall under UB LIS program goals 1, 2, and 4 (http://gse.buffalo.edu/lis/mgo)
      The numbers are from the very detailed list of program objectives mentioned just above.

P1.1 **Graduates understand the nature of information** and its role in learning, research and
      scholarship, business, society, and culture.

P2.1 Graduates are able to analyze information needs and to design, promote, and assess information
      services. (related to 4.1 Management)
   P2.1.5    Graduates are able to design information services to meet a diversity of user needs, user
             communities, and user preferences. (>ALA 5F)

P2.3 **Graduates understand and are able to apply principles of knowledge organization for a wide
      range of applications, from organizing a collection to expert searching to support for
      learning.**

P2.5 Graduates understand and are able to apply the principles of information seeking and of reference
      and user services in different modes of communication (face-to-face, telephone, computer
      communication) for users of all ages and groups, including those with diverse styles of information
      use and diverse physical and intellectual abilities and needs. **Graduates understand and are able
      to apply a wide range of advanced search techniques.**

P4.2.4  Graduates understand the importance of and are prepared for continuing professional
        development and lifelong learning. (ALA 7A, S2.3.7)

P4.3.1  Graduates are equipped and motivated to use information to transform lives and to promote
        equity, mutual respect, and a rich social fabric in a diverse society.

P4.3.4  Graduates will demonstrate understanding of, respect for, and sensitivity to the diversity in
        society, incl. age, culture, economic means, ethnicity, language, physical and mental ability,
        race, and sexual orientation.

P4.6    Graduates are ready to serve as leaders and advance the field.

P5 Graduates understand the importance of personal qualities conducive to professional success. UBLIS
   571 fosters the development of such qualities, especially Assertiveness and Innovativeness.

**optional**                    **Information about the instructor**

Dagobert Soergel is Professor, Department of Library and Information Studies, Graduate School of Education, University at Buffalo since 2009, Professor, College of Information Studies, University of Maryland, 1970 – 2010, and Professore Onorario, Dipartimento di Ingegneria e Scienza dell'Informazione, University of Trento since 2007.

He has been working in the area of classification (taxonomy, ontologies) and thesauri both practically and theoretically for over 50 years. He is the author of the still-standard text- and handbook *Indexing Languages and Thesauri. Construction and Maintenance* (Wiley 1974) and of *Organizing Information* (Academic Press 1985), which received the American Society of Information Science Best Book Award, and more than 100 papers and presentations in the area of classification / ontologies and more broadly in information science.

He has taught courses at several universities in the US and Germany, and has been offering a long-running tutorial on *Knowledge Organization Systems (KOS) in Digital Libraries* at the European Conference on Digital Libraries (ECDL) and at the Joint Conference on Digital Libraries (JCDL) in the US.

He was the chief architect for several thesauri, including the Alcohol and Other Drug Thesaurus and the Harvard Business Thesaurus. He has written about the future of digital libraries and led the editing team for the EU-funded DELOS Network of Excellence in Digital Libraries response to the European Union call for online consultation. He was a member of the Working Group on the DELOS Digital Library Reference Model. 1997. Recent publications include three papers in the Journal of the American Society for Information Science and Technology on the nature of relevance, on sensemaking, and on the topicality of art images. Currently he is Director of Evaluation for the Clinical and Translational Science Award, University at Buffalo, and a consultant to the Data Management Unit, Information Technology Services, World Bank Group.

Dr. Soergel received the highest award of the American Society for Information Science, the Award of Merit and in 2009 the Contributions to Information Science (CISTA) Award of the Los Angeles Chapter of ASIST. He received the Governor's Award for Volunteering Excellence (Virginia). Gold Medal, 1993.

Items cited http://etoh.niaaa.nih.gov/ AODVol1/Aodthome.htm
www.dlib.org/dlib/december02/soergel/12soergel.htm
www.delos.info/files/pdf/events/brainstorming_dec05/DELOSBrainstormingReport_Final.pdf
http://www.buffaloctrc.org/

More information about the instructor
  GSE Faculty Spotlight
  www.dsoergel.com/ublis571-0.0-1Reading1GSEFacultySpotlightSoergel.pdf
  Short CV www.dsoergel.com/ublis571-0.0-1Reading2SoergelCVShort.pdf
  Full CV www.dsoergel.com/ublis571-0.0-1Reading3SoergelCVLong.pdf

**optional**                   # Teaching Statement

"There are those who look at things the way they are, and ask why?
I dream of things that never were, and ask why not?"
    George Bernhard Shaw as paraphrased by Robert F. Kennedy.

## Guiding principles.

1   I endeavor to inspire students to look beyond present practice – which, of course, they need to understand – to what could be, so they can become true leaders in the field.

2   I guide students to an understanding of basic, often timeless, concepts and theories – always illustrated by examples and assignments that connect to practice – so that they have a firm foundation both for lifelong learning and for critically examining present practices and reinventing them as needed to better serve users.

3   I imbue students with a spirit of user orientation, so that  they bring  an understanding of user tasks, sense-making processes, and resulting requirements to everything they do, from structuring classifications and designing Web sites to indexing to formulating queries to presenting results. In all of this I make students think.

## Implementing these principles requires

1   Careful structuring of course materials – often creating a new conceptual framework – and good document design.

2   Guiding students to their own discovery of ideas. For this purpose I often conduct interactive sessions in front of a blackboard on which a framework evolves step by step from student contributions. Face-to-face class sessions with lecture, discussion, and in-lecture exercises supported by extensive lecture notes on paper have served me well in pursuing my teaching goals, but I have also developed online materials that recreate the interactivity to the extent possible.

## I pay great attention to choosing good examples

1   The human mind works on examples and creates concepts by comparing features of many examples. The mind does often have difficulty grasping a concept without an example. Therefore choosing good examples students can relate to is at the heart of supporting student's learning.

2   I try to find examples that illustrate several concepts and principles, so that students do not need to get familiar with a new example every time a new concept is introduced and, perhaps more importantly, so students can see how several concepts work together in practice.

**optional**    **On learning communities, power structures, and name customs**

I propose, but do not impose, use of first names all around. So I am happy and prefer to be addressed as Dagobert, but if a student is more comfortable with Mr. Soergel or Dr. Soergel, I will answer to that also.

Here are some relevant thoughts. At its best, a course is a learning community. We are all here to learn, but learning does not mean to listen to and accept the word coming down from on high, it means to analyze critically, to critique, to challenge, to dispute, to discuss, to share viewpoints and ideas. There are differences in what each member brings to the table; each member of the community has a stock of knowledge and a unique set of experiences; of course some are more knowledgeable or experienced than others, but everybody contributes and everybody takes away.

Such a learning community thrives best in a social structure that values and embodies equality and mutual respect. (This is also why I feel very strongly about student participation in academic governance.). Make no mistake, language has a powerful influence on social structure. In many cultures, structures of kinship, power, and authority are ingrained into people's minds through the use of language, specific (often honorary) terms used to address people in specific kinship relationship to the speaker. The custom of students addressing the instructor as Dr. X but the instructor addressing students by their first name is a case in point. When I grew up in Germany, the general mode of address outside the circle of family, relatives, and close friends was "Sie", equivalent to using last names. Starting in 10th grade, teachers addressed students by their last name or Sie. Formal, but equal. In the US of today, use of first names is commonplace, even among strangers. This makes the custom of inequality in the mode of address, still widely practiced in academia, even more grating. There are variations from unit to unit and from discipline to discipline. In computer science (as in high-tech companies) using first names all around (from chair to students who just started) is the norm.
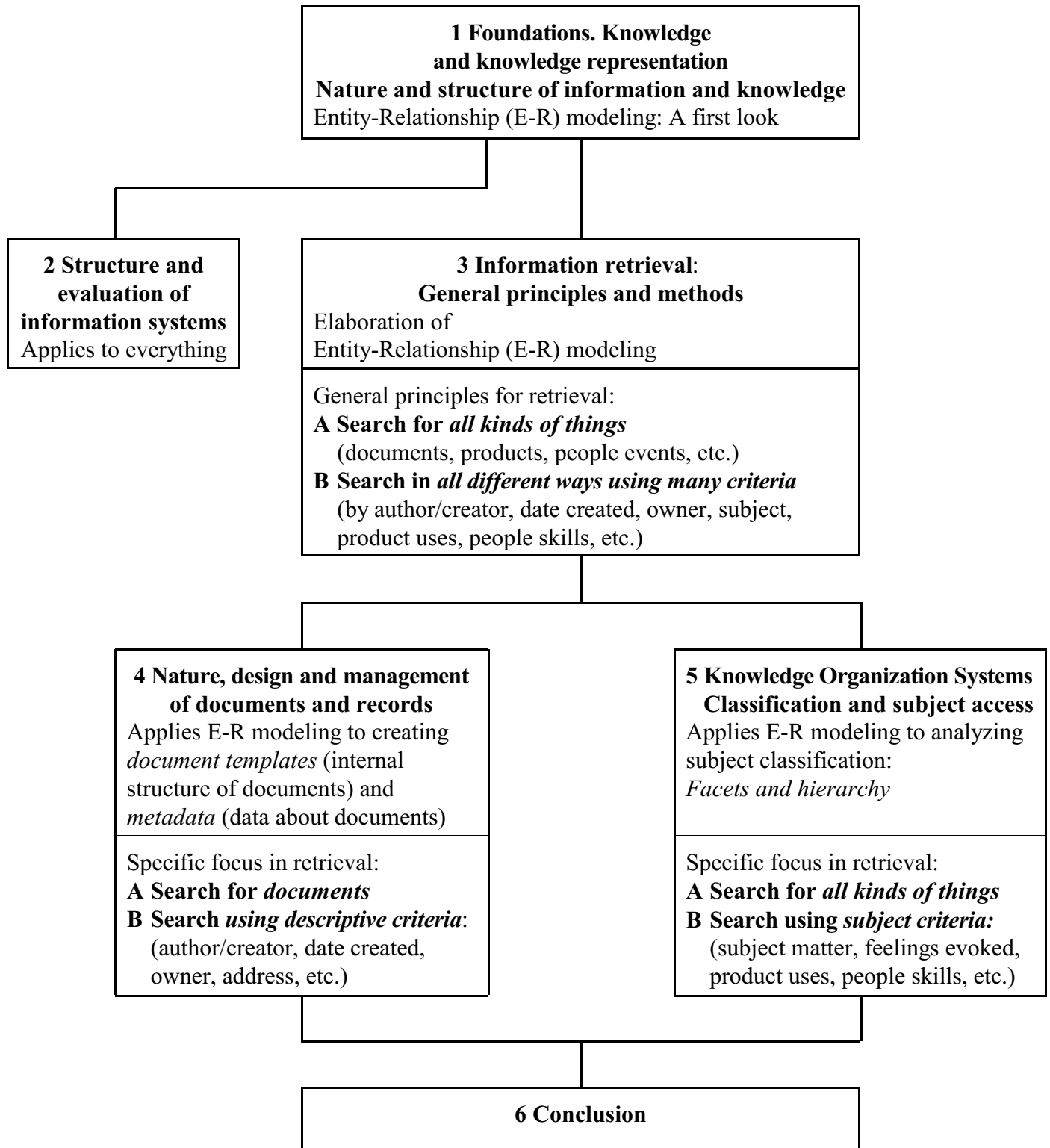
**required**            # The nature of the course

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| **Broad course,** prepares for **a wide range of jobs** and **life-long learning** | The course considers **all kinds of information systems and a wide range of concepts and techniques**. **Emphasis is on concepts (**rather than on spe-cific skills) to provide a solid **basis for life-long learning** as required by ever-changing practice. Some topics are introduced as windows into new areas so you can discover interests you want to pursue in more depth later.<br><br>The course prepares for pursuing a wide range of interests. It generalizes insights gained in the library world over centuries and makes them useful for other contexts, such as expert systems, digital libraries, content management systems, or the World Wide Web, where they are desperately needed. **Library cataloging is included as an example of general principles.** |
| **Content: structure & representation of information** | Structuring information and knowledge serves two purposes:<br><br>1   **Finding and applying information** (as in the Semantic Web). This often involves logical inference or statistical processing to derive an answer or have a system take action.<br><br>2   **Presenting information** in a structure and format the user can assimilate and understand so that she can put the information to use. Thus, we must consider the structure of information in the user's mind. This is crucial for learning and instruction.<br><br>**Information Architecture** and **Instructional Design**, each from its own perspective, use the study of Information Organization and contribute to it. |
| **Five parts: From principles to applications** | 1   **Foundations. Knowledge and knowledge representation**<br>Nature and structure of information and knowledge. Weeks 1 -2<br><br>2   **Structure and evaluation of information systems**. Week 3<br><br>3   **Information retrieval: General principles and methods**.<br>Principles are applied and made more concrete in Parts 4 and 5. Weeks 4 - 5<br><br>4   **The nature, design, and management of documents and records**. W 6-7<br><br>5   **Knowledge Organization Systems. Classification and subject access**.<br>Strand 1. General principles. Strand 2. Analysis of highly used KOS W 8-13 |
| **Theory for improved practice** | **The course presents theory in the service of improved practice**. You will<br>• be able to apply course concepts to practical problems;<br>• understand the principles that underlie current practice and thus be able to do a job intelligently;<br>• have a sound basis for changing current practice for new requirements. |

**required**          **The structure of the course** (use with Lecture 1.1b)

**1 Foundations. Knowledge
and knowledge representation
Nature and structure of information and knowledge**
Entity-Relationship (E-R) modeling: A first look

**2 Structure and
evaluation of
information systems**
Applies to everything

**3 Information retrieval**:
**General principles and methods**
Elaboration of
Entity-Relationship (E-R) modeling

General principles for retrieval:
**A Search for** *all kinds of things*
 (documents, products, people events, etc.)
**B Search in** *all different ways using many criteria*
 (by author/creator, date created, owner, subject,
 product uses, people skills, etc.)

**4 Nature, design and management
of documents and records**
Applies E-R modeling to creating
*document templates* (internal
structure of documents) and
*metadata* (data about documents)

Specific focus in retrieval:
**A Search for** *documents*
**B Search** *using descriptive criteria*:
 (author/creator, date created,
 owner, address, etc.)

**5 Knowledge Organization Systems
Classification and subject access**
Applies E-R modeling to analyzing
subject classification:
*Facets and hierarchy*

Specific focus in retrieval:
**A Search for** *all kinds of things*
**B Search using** *subject criteria:*
 (subject matter, feelings evoked,
 product uses, people skills, etc.)

**6 Conclusion**

**optional**                    **Materials for the course**        elaborates on Quick Start Guide

All required print materials are supplied on paper by the instructor.
Electronic copy available at UBlearns or www.dsoergel.com/ublis571.

| **Textbook** | Soergel. **Organizing information**. **Principles of database and retrieval systems**. Orlando, FL.:Academic Press; 1985. 450 p. ISBN 012-654261-9. |
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| **Syllabus & calendar** <br> Red | "Information Central": Lectures for this week; for each lecture: <br> - the theme(s) of the lecture <br> - the readings (do beforehand to prepare for the lecture) <br> - the assignments (do afterwards to apply and reinforce the concepts). <br> The weekly calendar page can be used as a checklist of things to do. <br> A Word document with all checklist pages is in the Assignment Templates. <br> **The schedule is flexible**; use the calendar as a pacing guide to help you keep on track. Quiz and exam dates and the term paper due date are fixed. |
| **Lecture notes** <br> red dividers: week <br> pink: lectures | - Some self-standing like a book chapter, most to go with recorded lectures. Guided exercises using PowerPoint. <br>   Also Supplement with elaboration and advanced topics (pdf only) |
| **Assignment package** <br> gold dividers | - Descriptions of tasks, worksheets, and deliverables to be handed in <br> - Assignment materials (explanations, examples, materials to work with) <br> - **Word templates for assignment deliverables** (Word files) XXX give location |
| **Readings** <br> green dividers by week | The introduction sheet for each reading tells you how carefully to read; also follow your interests. <br> **Model Catalog** (first reading): Catalog records in the standard MARC (MAchine-Readable Catalog Record) format illustrating descriptive and subject cataloging. Both AACR2 and RDA <br> **Used throughout, examples for Assignments 8 and 13.1-4** <br><br> **Other useful books for further study or reinforcement**: <br> Jonassen, D. H.; Beissner, K.; Yacci, M. **Structural knowledge. Techniques for representing, conveying, and acquiring structural knowledge**. Hillsdale, NJ: Erlbaum; 1993. 265 p. <br><br> Optional readings go deeper or cover advanced topics. Some are included in the reading packet and the lecture notes+assignments. All are available as pdf. |

**Important**          **Arranging paper materials for ease of use**

Arrange the paper materials in three three-ring binders using the cover insert pages provided:
  •     Syllabus&calendar and lecture notes (red and pink)
  •     Assignments (gold)  ||
  •     Readings (green)
For each binder, there is a **bookmark**. Move the bookmark along as you go to keep your place.

Or you can assemble the materials by week. (Most students who tried this found the original arrangement more useful.)

**required**                        **Conduct of the course**

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| **Work each week** | The short of it: Follow the weekly calendar / checklist of things to do. <br> Week 1 ends on the day of Lecture 1 (M Jan. 25 - W Jan. 27) <br> Week 2 ends on the day of Lecture 2 (W Jan. 27 - W Feb. 3), etc. <br> **Rest of this block is an elaboration, optional** |
| **For better under-standing of previous week's topics** | • **Review the answer keys for the assignments returned** (we will get these to you a day or two before class day). <br> • **Do the assignments, submit by the end of the week** |
| **For this week's new topics** | • In the Lecture Notes, **read the pink sheets (**objectives, practical significance, discussion questions). <br> Read the assignments that are assigned. <br> • **Do the readings** <u>before</u> the lecture / presentation or you will get lost. Optional readings can be done after the lecture. <br> The introduction sheet for each reading tells you how carefully to read it. Also follow your own interests. <br> • Listen to the lecture audio while looking at the lecture notes and/or do the guided exercise as instructed in the weekly calendar <br> • **Think about the discussion questions**. <br> • **Note questions and observations** in your learning blog or post to the discussion board on UBlearns <br> • Optional: **Learning blog**. **Post** questions and observations to the discussion board or email the instructor. I will compile items received by midnight Wednesday and provide a document with answers |
| **Look ahead** | • Note the assignments assigned this week, due at the end of next week. |

**required**

| | |
|---|---|
| **Assignments** | 13 assignments (typically 2 -3 hrs) to practice the course concepts. <br> **Unless stated otherwise, assignments can be done in teams of 2 -3 with one copy submitted**, except individual essays. <br><br> Assignments are for learning; they must be submitted and will be marked for feed- back. But what really counts is what you have learned through doing the assignment **and reading the answer key**. <br><br> **Do not work too hard on the assignments**; when you go more than 50% over the suggested time, you are doing something wrong, ask the TA. The answer sheets are more complete than what is expected from your answers. <br><br> **Assignments 8 and 13 are required for a grade in the course;** you can work on them in teams but you must hand them in individually. These assignments are required because they are not covered in the final. <br><br> **Students who skip the assignments will not master the concepts or integrate them in their knowledge and thus will fall behind.** |

**required**

| | |
|---|---|
| **Interaction** among students and with the instructor and TA | Use whatever collaboration platform you are comfortable with, UBlearns, Facebook, Slack (instructions will be emailed) |
| | Meetings by Skype or phone |
| | Form **study groups**. |
| | Schedule in-person or virtual meetings w/ instructor |
| | Individual or group phone meetings with the instructor will be scheduled after the four-week quiz |
| | Two weekly conference call where anybody can call in will be scheduled as long as there is interest (announced by email) |
| | **Post or email questions to the TA or the instructor.** |
| | **Before you spend hours on figuring something out, ASK** |
| **Feedback**. Quiz<br><br>Midterm<br><br><br>Assignments | **30-min quiz after Week 4** <br><br>**Midterm (approx. 90 min) <u>Closed-book:</u>** test what is in your head. Sample questions see Lecture Notes p. ~281-284.<br><br>**Assignment marks** (use with caution). // **Talk to the instructor** |
| **Course requirements**<br>**Final exam**<br><br>**Term paper** | **Final** (open-book, 5 hours). Covers concepts from all lectures, readings, and assignments, except specifics from Ass. 8 and 13. Sample questions in Lecture Notes 14.1 and 14.2, p. ~413+<br>Open book. You may find it useful to compile review notes.<br><br>**Term paper** (full description: Ass. package, p.~69), **4K-5K words**<br>**Main option:**<br>Analyze an existing IR (Information Retrieval) system or<br>design a new one<br>**Advanced option** (A students only)<br>A reflective essay on a theme of your choice:<br>  - <u>make connections</u> between ideas from the readings, lectures, and assignments;<br>  - consider implications and applications;<br>  - identify issues, questions, problems for further study.<br>Can be a personal essay reflecting your personal experience and views. Starting with Lecture 1 and continuing throughout the course, jot down ideas and connections as they occur to you. |
| **Ass. 8 and 13** | **Satisfactory completion of Assignment 8** (Descriptive cataloging practice) and **Assignments 13** (Subject cataloging and searching practice). |

| Grading | Grading is based on the student's **understanding and ability to apply course concepts to practical problems.** The instructor will consider all available evidence.<br><br>**The primary sources of evidence are the final exam and the term paper, with more emphasis on the better of the two**.<br>• If the final and paper result in a grade of A, that is the grade.<br>• If not, the following subsidiary evidence might improve the grade:<br>  • midterm (whose main purpose is feedback),<br>  • the assignments (whose main purpose is learning),<br>  • comments and questions in class, on the discussion board, or in other interactions with the instructor,<br>  • (at the student's option) the student's learning blog/diary (see below).<br><br>Since grading is based on understanding achieved and not points earned, there is some uncertainty. However, **there is safety net**. If you have done good work all semester, you should not be anxious about the grade. **Furthermore, if a student has put forth adequate effort but still has not achieved a grade of B, I will provide guidance for further study intended (but not guaranteed) to produce the understanding needed for a satisfactory grade**.<br>**It is rare that a student does not pass the course with at least a B**. |
|---|---|
| **Scale for feedback marks on assignments and grades on exams and paper** | Assignments will be marked for feedback on a scale from A - F. Remember that what  is what you understand after you read the answer sheet (recommended even if your grade should be A+). You could receive an F on an assignment but completely understand the concept and be able to apply it after you carefully read the answer sheet. Such understanding will show up in your final exam and term paper. Below is the break down of the grades and their explanations:<br><br>A+ Truly exceptional, shows excellent understanding, good insight, original<br>contribution, inventive in applying course concepts. Rarely given.<br><br>A   Not quite A+.<br><br>A- Exceeds expectations. Shows a very good level of understanding and ability to apply course concepts.<br><br>B+ Fully meets expectations.<br><br>B  Meets expectations with some limitations. Needs attention to missed points and careful reading of the answer sheet to improve.<br><br>B- Does not meet some expectations, not fully able to apply course concepts, needs some effort to improve.<br><br>C  Poor understanding, not able to apply course concepts, needs major effort to improve (revisiting lectures and readings).<br><br>F   Complete lack of understanding. Communicate with the instructor and/or the TA |

**required** (Reading this is required. Then you can decide whether to keep a learning blog.)

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### Learning blog /  diary / discussion forum

You may find helpful to keep a learning blog/diary in which you enter for each week:

1   What have I learned, what was most important, what was most interesting, what was extraneous; what helps me in my (future) work?  How?

2   How does a course idea support better service to users, directly or indirectly?

3   How does a course idea relate to other ideas in this course and/or to other courses?

4   Comments on readings – what did it contribute, how hard was it, ...

5   What did I not understand?  How does my not understanding this affect my (future) work? **What questions do I have?**

6   Course critique and suggestions.

See templates in the assignment templates. Please **post** your observations, especially **questions, to the discussion forum** for the week (copy and paste from your learning blog); you can do so anonymously. Discussion posts will be compiled and **questions answered by the instructor**. Keeping a learning blog and posting to the discussion board are optional

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**Academic Integrity**

"When an instance of suspected or alleged academic dishonesty by a student arises, it shall be resolved according to the procedures set forth herein. These procedures assume that many questions of academic dishonesty will be resolved through consultative resolution between the student and the instructor." Full statement at www.grad.buffalo.edu/policies/academicintegrity.php

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**Accommodations for students with disabilities**(relevant to all students)

Please work with UB Accessibility Resources (AR) to receive the support that enables you get the most out of your education. I am also looking forward to working with you to make the course a good experience. "Government regulations require that university policies, practices, and procedures not discriminate on the basis of disability. AR coordinates reasonable modifications so that individuals with disabilities can access and benefit from all programs, services, and activities of the university."

To receive formal accommodations (such as a sign language interpreter in class), a student must submit a form from AR to be signed by the instructor. AR: www.student-affairs.buffalo.edu/ods/request Also see sas.buffalo.edu/pdfs/disability_resource_guide.pdf

I will work with students on more informal arrangements as appropriate

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**Religious Holidays** (relevant mostly to students attending a seated course)

For this course: When exam deadlines interfere with religious observances, please let the instructor know so we can work out alternative arrangements.

**SUNY policy**: "on those religious holidays when members of a faith typically observe the expectation of church or synagogue [or other houses of worship or religious groups, DS] that they be absent from school or work, ... individual students will be excused from class without penalty if expressly requested." (From SUNY Policy Manual, 1975, Section 091.3.) Make-up opportunities will be provided.

**required**                                       **Mechanics**

- The official "class day" is Wednesday.
- **Course email goes to your UB email account. If you do not check that account, set up forwarding**.
- Submit assignments, check grades, and download graded assignments through UBlearns.
  (If using UBlearns is a problem, contact the TA.)
- Post questions and comments on UBlearns or email the instructor or the TA.
- All documents are on UBlearns and on www.dsoergel.com/ublis571

| | |
|---|---|
| **Assignments** | • Assignments are assigned on W and generally due the following W 10 pm, there is no penalty for late assignments. While you do not "earn points" for assignments, it is the effort and learning that you get from them that count.<br>• The file name of submitted assignments **must** follow this convention:<br>    UBLIS571[your UBIT ID]AssignmentNumber   (no spaces)<br>    Example: UBLIS571smithmAssignment12.3a.docx<br>When you customize the assignment templates (see Assignment packet p. ~3), the filename will be created in the first line, so you can just copy and paste.<br>• Submit assignments and receive graded assignments through UBlearns. Answer keys are emailed by M 10 pm (**open only after you submitted**). . |
| **UBlearns** | |
| **Login** | 1  Go to https://ublearns.buffalo.edu or access UBlearns from MyUB. Click on Login.<br>2  Enter your UBIT name and password (same as you use for your email).<br>3  Click on Login. |
| **Access UBLIS 571** | 1  In the right panel, locate My Courses; expand if necessary.<br>2  Scroll to LIS571LECOA1: Information Organization:216122465 and click on it. |
| **Submit Assignment** | 1  In the left navigation panel (dark blue), click on Assignments<br>2  Click on the assignment you want to submit.<br>3  Click on Browse My Computer and upload your file. |
| **Check grades, download graded ass.** | 1  In the left navigation panel (dark blue), click on My Grades.<br>2  The options are clear from the layout. |
| **Access discussion board** | 1  In the left navigation panel (dark blue), click on Discussion Board.<br>2  Click on the Forum you want.<br>3  Read threads or Create Thread to post a message on a new subject (the first message in the thread). You can paste text into a message (often best).<br>4  If there is already a message on your subject Reply to an existing message<br>5  To post your intro, Create Thread with subject last name, first name (Smith, Martin). |

**required**                     **Small things matter**

**On the benefits of being**
**careful, accurate, precise, in agreement with standards, and systematic**

In the Syllabus, under Mechanics (p. ~19), there is the instruction

> The file name of submitted assignments **must** follow this convention:
> UBLIS571[your UBIT ID]AssignmentNumber   (no spaces)
> Example: UBLIS571smithmAssignment12.3a.docx

> A similar instruction is given in the instructions for the midterm

In the past, few students (usually the better students) followed these instructions. If you are not careful on a job with following rules, instructions, and data formats, you will impede your progress in the professional world. If you are not careful in a job application, you will not get a job in the first place

**Why is this important?**
If everybody follows the file name instructions, the files in my folder for the UBLIS 571 midterm will be arranged by students' UBIT IDs (Last name would be even better, but I decided to keep things simple). If you follow this convention for all your course submissions in the program, your files will sort by course and within course by assignment.

**More tips on file names**
- For any file you want to send to other people, make sure the file name is informative for the receiver

  The file name *TermPaper* may be clear to you, but if I get 15 of these, the file name does not tell me whose term paper it is.
  If you send a job application to an organization with the file name *JobApplication* the file name tells the receiver neither who you are nor what job you are applying for. Instead, use something like
  > *HR7513JobApplication SmithDana*
  (or follow specific instructions given in the job announcement)
- Files that are recurring over time, such as minutes of the Events Committee or time sheets

  should have the committee name and the date in them. The date should be written in a format that will result in the correct chronological sort, namely thus
  > *EventsCommitteeMinutes2015-03-28*
  This is the format used by the US military and the format specified in XML
  For another example: *TimesheetSmithDana2015-03-28*

**Miscellaneous small tips**

- If there is just one careless mistake in your job application, your application may end up in the trash can (or recycle bin) without further consideration. Organizations receive many application, sometimes hundreds. Spelling mistakes, grammatical errors, a cover letter that says "Insert Institution here" are all easy ways to weed out applications that do not merit further consideration.

- In every message concerning UBLIS 571 I put *UBLIS 571* into the header. That way I can define a filter in my email program that lets me file these messages into my UBLIS 571 mail folder with a single keystroke rather than using drag and drop.

- In cataloging you need to be accurate and precise. Also in the bibliography for a paper you submit to a journal. In both cases software should assist you and take some of the drudgery out of being precise.

- In the term paper for UBLIS 571 you must follow my supplemental style rules; in particular, you must use legal outline numbering (1, 1.1, 1.1.1), an international standard, rather than I., A., 1., a), (1), (a) …, which is senselessly passed down from generation to generation in composition courses and is equally senselessly the default in many word processing programs.

**Larger issues – more serious consequences**

Think about Electronic Health Records. Entering codes for conditions of the patient, treatments, and test results accurately following the standard established in the hospital or physician's practice may be a matter of life and death. Different health systems now often use different standards for diseases/conditions, for treatments, and for test results; when a patient goes from one health system to the next (for example, on account of travel), this may also be a matter of life and death.

**Small things do matter.**

## Reference list of detailed objectives and practical applications Skip for now but

*Refer to these objectives throughout the class and read again towards the end of the class.*

| | Main theme | Objectives: You should | Information professional task supported |
|---|---|---|---|
| 0 | **User orientation** | .1  have the spirit of user-orientation. P2.1.5. | - everything information professionals do |
| 1 | **Types of knowledge**<br><br><br><br>**Types of concepts**<br>Lect. 2.1-2.2, 6.1-6.2 | .1  understand the characteristics and facets of different types of knowledge P1.1<br><br>.2  be able to apply this understanding to<br>  • the analysis of information needs,<br>  • the organization  of information, including the design of classifications and search support,<br>  • information presentation,<br>  • the evaluation of information . | - understanding information needs (as in a reference interview);<br>- analyzing and assessing info. found;<br>- organizing different kinds of knowledge in an information system.<br><br>- understanding how people think; thus<br>- understanding how people ask questions and how they process information; thus<br>- presenting the right content in the right form. |
| 2 | **Knowledge representation Document design**<br>Lect. 2.1-2.2, 6.1-6.2 | .1  understand the main issues in and approaches to knowledge representation; apply this understanding in the analysis and design of information systems. P2.3 | - adapting answers to users' mental structures;<br>- searching effectively;<br>- organizing a body of knowledge<br><br>  for simple retrieval, and<br><br>  for more complex inference. (Inference enables a system to draw conclusions from the knowledge stored, creating new knowledge.) |
| 3 | **Information structure**<br>Lectures 1.1-2.1, 4.1-5.2 | .1  be able to design the  conceptual data schema for a new info. system P2.3.4.1<br>.2  be able to analyze the conc.data schema of an existing information system P2.3.4.1<br>.3  be able to apply this understanding to indexing and query formulation P2.3.5. | |
| 4 | **Retrieval performance measures**<br>Lecture 3.2 | .1  understand retrieval performance measures (P2.5.2.2) and be able to apply them to :<br>  • the specification of individual search requirements;<br>  • the determination of optimal search effort;<br>  • the evaluation of search results;<br>  • the evaluation of information systems. | - establishing and meeting the requirements for individual searches;<br>- selecting information systems to be acquired;<br>- designing information systems to meet performance criteria. |
| 5 | **File organization and search algorithms**<br>Lecture 5.2 | .1  understand basic principles of file organization, storage structures, and index structures P2.4.2.1<br>.2  understand  search algorithms, including ranked retrieval, and are able to apply that understanding in searching. P2.3.2. | - searching: formulating simple Boolean queries; using knowledge of search  algorithms for effective searching;<br>- designing efficient storage structures, incl. the use of hierarchical inheritance. |
| 6 | **Information structure and usability**. **Document design**<br>Lectures 6.1-6.2 | .1  understand the relationship between information structure/representation and usability P2.3.1.2;<br><br>.2  be able to apply understanding of information structure and principles of document design and text structure to inforrmation presentation, including the creation of good documents of all kinds P2.3.1.3<br>.3   ... to the assessment and evaluation of information in all forms. P2.3.1.4 | - designing systems that can generate tailor-made documents;<br>- preparing customized answers;<br>- delivering search results in a useful layout;<br>- evaluating documents. |

| | Main theme | Objectives: You should | Information professional task supported |
|---|---|---|---|
| 7 | **Linguistic techniques: syntactic and semantic analysis** Lecture 6.1 | .1  be aware of linguistic techniques and their applications in info. retrieval (IR) P2.3.3.1. <br><br> .2  [understand the basics of parsing sentences and semantic analysis, including word sense disambiguation.] P2.3.3.1.1 <br><br> .3  understand anaphora and its effect on retrieval and fact extraction P2.3.3.1.2. | - replacing labor-intensive human processing of vast amounts of text with automated tech-niques for text processing based on linguistics. Many commercial products available. <br><br> - understanding free-text search systems; <br><br> - being aware of systems that extract from text just the data the user needs; <br><br> - being aware of automated translation - increasingly important with globalization, and very important in the Web. |
| 8 | **Descriptive cataloging of documents** Lectures 7.1-7.2 | .1  understand the application of general information structure principles to the descriptive cataloging of documents and other entities P2.3.5.2 <br> .2  be aware of the variety of codes for bibliographic description P2.3.5.2.1 <br> .3  be able to catalog consulting AACR2 or RDA P2.3.5.2.2. | - understanding and applying traditional descriptive cataloging; <br><br> - describing and organizing electronic documents — in an organization's collection of documents/records or in the huge document collection on the World Wide Web (metadata). |
| 9 | **Vocabulary control** Lectures 8.1-8.2 | .1  understand the problems and principles of vocabulary control and be able to apply these principles to indexing and searching P2.3.5.3.1. | - designing systems that help users cope with vocabulary confusion through controlled vocabulary or query term expansion; <br> - doing good searches without such support. |
| 10 | **Functions of classification** Lectures 8.2, 9.2, 11.2 | .1  understand the functions of classification in information retrieval systems, especially request-oriented indexing and inclusive searching P2.3.5.3.2 <br><br> .2  Understand the functions and importance of classification for a wide range of other tasks P2.3.5.3.3 | - applying request-oriented indexing for improved system performance; <br><br> - exploiting the vast intellectual capital available in classifications for functions beyond bibliographic retrieval, at the same time increasing compatibility and synergy between different information functions. |
| 11 | **Structure of subject classification: Facet structure and hierarchy** Lectures 8.1-13.2 See also 10 | .1  understand the principles of the structure of subject classification, in particular facet organization and hierarchy  P2.3.5.3.4 <br><br> .2  be able to apply these principles to the analysis of existing schemes and to indexing and query formulation  P2.3.5.3.5 | - indexing (cataloging); <br> - analyzing a search topic and formulating the query, using hierarchic expansion; <br> - designing systems that assist users in search topic clarification and in query formulation; <br> - developing classifications / thesauri. |
| 12 | **Familiarity with specific subject classification schemes** Lectures 12.1-13.2 | .1  be aware of the variety of classification schemes, thesauri, etc. and be acquainted with major American schemes: <br>    Yahoo  (or DMOZ) Classification, <br>    Dewey Decimal Classification, <br>    Library of Congress Classification, <br>    Library of Congress Subject Headings <br>    P2.3.5.3.6 | - provides a door into a vast array of sources of knowledge about concepts and terminology, knowledge that lets you apply the general principles of facet structure and hierarchy to high-quality indexing (cataloging) and searching. |

## Part 1. Foundations. Knowledge and knowledge representation

Jan. 27    *1.1-1.2    Intro. and overview. Information systems and information structure.    ⓘ

Feb. 3    2.1-2.2    2.1 The nature of knowledge. 2.2 Knowledge representation

## Part 2. Structure and evaluation of information systems

Feb. 10    3.1    The structure of information systems.    ⓘ

3.2    Evaluation of information systems: Performance and usability

## Part 3. Information retrieval: General principles and methods

Feb. 17    4.1    An integrated information structure model

4.2    Data schemas and formats    ⓘ

Feb. 17    *30-min quiz*, *distributed Feb. 17, due Feb. 24*

Feb. 24    5.1    RDF, linked data, SPARQL query language

5.2    Access to information: data structure & search modes. Retrieval as prediction. Ranking

## Part 4. The nature, design, and management of documents and records

Mar. 2    6.1-6.2    Document function, structure, analysis, and design.
6.1a Document functions and document design (information design)
6.1b Document macrostructure and inter-document relationships
6.2a Formatting documents for interpretation by computer programs. Document markup languages
6.2b Document analysis for retrieval and information extraction

Mar. 9    7.1-7.2    Cataloging and metadata. Bibliographic control: description, entries, and access
7.1a Metadata 7.1b Cataloging principles 7.1c Description  7.2a Entries 7.2b Dublin Core etc.

Mar. 9    *Midterm exam* covers Weeks 1 - 6. Distributed W Mar. 9, due W Mar. 23

Mar. 16    *Spring Break*

## Part 5. Classification and subject access  Two strands: General principles    Analyzing specific schemes

Mar. 23    8.1a-b    Explorations in subject access and KOS structure. Cont. Ass. 10 ‖ Media Streams Classification ⓘ ⓘ

8.2    8.2a KOS functions. Abstracts  8.2b Vocabulary control. Lexical relationships.

Mar. 30    9.1    KOS conceptual structure 1: purely conceptual (logical)    ⓘ ⓘ

9.2    Application of KOS structure to searching    ⓘ ⓘ

Apr. 6    10.1    Constructing a hierarchy from facet combination    ⓘ ⓘ

10.2    10.2a  Brief introduction to Assignments 13.1 - 13.4. 10.2b  Intro. Ass. 13.1 DDC

Apr. 13    11.1 - 11.2    Introduction and in-lecture exercise:  11.1 Assignment 13.2 Yahoo 11.2 Assignment 13.2 LCC ⓘ

Apr. 20    12.1    KOS conceptual structure 2: application to database organization (implementation)

12.2    Brief discussion of  12.2a  LCSH and Assignment 13.3 12.2b ERIC and Assignment 13.4

Apr. 27    13.1    Exploration of Knowledge Organization Systems (KOS)    ⓘ

13.2    Indexing and system performance (conceptually also belongs to Part 3)

## Part 6. Conclusion

May 4    14.1- 14.2    Final review    ⓘ ⓘ

**May 11**    **Final exam**  Posted `F May 6, due `W May 11 (complete in one 5-hour session)

**May 18**    **Term paper due**. Last day for Assignments 8 and 13 (email if you need an extension)

* Lecture number: 1.1 is Week 1, Lecture 1, 1.2 is Week 1, Lecture 2, **...**

# List of Assignments

| No | Assignment | Assigned | Due |
|---|---|---|---|
| | Personal introduction: Introduce yourself to the class | Jan, 25 | Jan. 27 |
| 1 | Hypermedia exploration: Perseus (2.5 hours)          (Lecture 1.2) | Jan. 27 | Feb. 10 |
| 2 | Bibliographic retrieval system exploration: MEDLINE  (3h) (Lect. 1.2) | Jan. 27 | Feb. 10 |
| 3 | Online catalog search exercise  (1.5 hours)          (Lecture 1.2) | Jan. 27 | Feb. 10 |
| 4 | Restructuring a semantic network  (1.5 hours)          (Lecture 2.2) | Feb. 3 | Feb. 10 |
| 5 | Analytical description of an information system (3)        (Lect. 3.1) | Feb. 10 | Feb. 17 |
| 6 | Developing a conceptual data schema  (1.5 hours)        (Lecture 4.2) | Feb. 17 | Feb. 24 |
| 6a | Short description of term paper  (1 hour)          (Lecture 5.2) | Feb. 24 | Mar. 2 |
| 7 | Develop a document template (2h)                (Lect. 6.1b) | Mar. 2 | Mar. 9 |
| 8 | Descriptive cataloging practice (6 hrs) (flex.duedate)      (L 7.1a-c) | Mar. 9 | Mar. 30+ |
| 9 | Problems of entry (1.5 hours) (flex. due date)          (Lecture 7.2a) | Mar. 9 | Mar. 30+ |
| 10 | Indexing of three documents and prep for Lecture 8.1 (2h) (L 7.2b) **(do before Lecture 8.1)** | **Mar. 9** | **Mar. 23** |
| *** | Take-home midterm, covers Weeks 1 - 6 (1.5 hrs)      (Lecture 7.2a) | Mar. 9 | Mar. 23 |
| 11 | Request-oriented indexing (2 hours)            (Lecture 8.2b) | Mar. 23 | Mar. 30 |
| 12.1-3 | Conceptual analysis and synthesis (total 7 h)      (Lecture 9.1- 10.1) | see each | see each |
| 12.1<br>12.2 | Semantic factoring (1.5 hours)                (Lecture 9.1)<br>Building a hierarchy of elemental concepts (1.5 hrs)    (Lecture 9.1) | Mar. 30<br>Mar. 30 | Apr. 6<br>Apr. 6 |
| 12.3 | 12.3a Practice   Hierarchy from facet combination with education<br>                concepts (2 hours)              (Lecture 10.1)<br>12.3b Real       Hierarchy from facet combination with concepts<br>                from 12.1 / 12.2 (2 hours)          (Lecture 10.1) | Apr. 6<br><br>Apr. 13 | Apr. 13<br><br>Apr. 20 |
| 13.1-4 | Subject cataloging and searching practice (Lect. 10.2 - 11.2) | see each | see each |
| | 13.1 | Dewey Decimal Classification DDC (4 hrs)    (Lecture 10.2) | Apr. 6 | Apr. 20 |
| | 13.2 | **One** of the following<br>      Yahoo: Yahoo (or DMOZ) classification (6 h)  (P11.1)<br>  **OR**  LCC: Library of Congress Classification (6 h) (L11.2)<br>  **OR**  DDC 2 More practice with DDC (6 hours)   (no Lect.)<br>  **OR**  Choice in consultation with instructor | Apr. 13 | Apr. 20 |
| | 13.3 | Libr. of Congress/Sears Subject Headings (LCSH) (3 h)<br>                              (no Lecture) | Apr. 20 | Apr. 27 |
| | 13.4 | ERIC Thesaurus (3 hours)              (no lecture) | Apr. 20 | Apr. 27 |
| | **Term paper** | **Jan. 27** | **May 18** |

red                       **Weekly calendar pages / checklists**

## Weeks 1 - 14

# Model catalog

## Required. Refer to this throughout the course.

1        Soergel, Dagobert with Miller, Amy
        **Model Catalog for UBLIS 571**. **Including a summary of the MARC Format.**
        2016 January. 46 p.

The model catalog gives many examples of cataloging documents, including a Web site, using AACR2R (**A**nglo-**A**merican **C**ataloguing **R**ules. 2. edition, revised) and  the MARC (**MA**chine **R**eadable **C**ataloging) format. It also gives for the same documents a comparison between cataloging using AACR2, (the old cataloging rules that are still important to know about) and RDA (Resource Description and Access, the new cataloging rules taking over gradually)..

In addition, it includes an **outline of the MARC format** for study

The **examples** are useful for

        Lecture 4.2. Data schemas and formats,

        Lectures 7.1-7.2. Cataloging and metadata. Bibliographic control: description, entries, and access
        and
        Assignment 8. Descriptive cataloging practice

        Lectures 10.2 - 11.2 Analysis and use of DDC, Yahoo, and LCC
        and
        Assignments 13.1-4 Subject cataloging and searching practice.

red

red

**Weeks 1 - 2. M  January 25 - W February 3**

Part 1.
**Foundations. Knowledge and knowledge representation**.

red                          **Things to do in Week 1, M January 25 - W January 27**

| Assignments due W Jan. 27.   □ required   ○ optional | | √ |
|---|---|---|
| **Review answer key(s)** | None | |
| **Assignment(s)** | Personal introduction: Introduce yourself to the class | □ |

| | **New topics this week** | |
|---|---|---|

| | **1.1a  General introduction to the course** | |
|---|---|---|
| **Readings** | 1 Objectives etc. (pink) Also have a look at Assignments 1-3. | □ |
| | 2 Textbook Ch. 1 **Information Systems for Problem Solving** | □ |
| | 3  Berners-Lee, Tim; Hendler, James; Lassila, Ora 2001 **The Semantic Web. A new form of Web content that is meaningful to computers will unleash a revolution of new possibilities**. Scientific American. 2001 May. Famous, still visionary. How course concepts apply in the future. | □ |
| | 4  Coyle, Karen. 2012 **A New World of Data. Populating the Semantic Web**. Am. Libraries; 2012 July, p. 21. Library cataloging data as an integral part of linked data on the Semantic Web. Importance of entity-relationship modeling for linked data. | □ |
| | 5  Gardner, Eileen 2013 **Application of UBLIS571 Course Concepts to School Librarianship**. UBLIS 571 Spring 2013. Optional,                    **For LMS Required** | ○ □ |
| | 6  Soergel, D. 2004. **Information retrieval**. Berkshire Encycl.on Human-Computer Interaction. | ○ |
| | 7  Soergel, Dagobert. **Information organization**. Berkshire Encycl.on HCI. 2004. 6 and 7 are **optional** overview articles  directed at a general audience; first introduction to many course concepts. If you have trouble early in the course, come back to these. | ○ |
| **Lecture** | Read the general introduction materials and the syllabus (course cover page, Quick Start guide, etc. at the very beginning of the course packet). Includes **Lecture 1.1a read text and/or listen to the audio from the slides** (10 min) | □ |

| | **1.1b Overview of the course and course materials** | |
|---|---|---|
| **Lecture** | **Lecture 1.1b  slides** (25 min) (Optional, done as part of the General Introduction) | ○ |

| | **1.1c Information Professionals in the 21st century** | |
|---|---|---|
| **Readings** | 1  Special Libraries Association. **Special Librarians Putting Knowledge to Work. Competencies for Information Professionals of the 21st Century** (2014 draft). | □ |
| | 2 U.S. Department of Labor. Bureau of Labor Statistics **Occupational Outlook Handbook. Librarians**  (a quite traditional view, limited). | ○ |
| **Lecture** | **Lecture 1.1c slides** (25 min) | □ |

**over**

| | 1.2 Information systems and information structure. | |
|---|---|---|
| **Readings** | Look over Assignments 1 - 3 so you can ask any questions you may have.<br>1 Lecture 1.2 Objectives etc. (pink sheet). . | ☐ |
| **Lecture** | **Lecture slides** (75 min) | ☐ |

| | | |
|---|---|---|
| **Learning blog** | Learning blog Week 1 due Jan. 27 | ○ |

| | Assignments assigned W Jan. 27 |
|---|---|
| **Assignments assigned** | ‣**Assignment 1, Hypermedia exploration: Perseus and Freebase** (2.5 hours) (due `Feb. 10)<br><br>‣**Assignment 2, Bibliographic retrieval system exploration: MEDLINE** (3 hrs) (due `Feb. 10)<br><br>‣**Assignment 3, Online catalog search exercise** (1.5 hours)  (due `Feb. 10) |

red          **Things to do in Week 2, January 27 - February 3**

| | Assignments due W Feb. 3 □ required ○ optional | √ |
|---|---|---|
| **Review answer key(s)** | None | |
| **Assignment(s)** | None | |

| | New topics this week | |
|---|---|---|

| | 2.1  Nature of Knowledge | |
|---|---|---|
| **Readings** | 1 **Lecture 2.1 Objectives etc**. (pink). Also have a look at Assignment 4 | □ |
| | 2 Textbook Ch. 2 **The Nature of Information** | □ |
| | 3 Skemp, Richard R. *The psychology of learning mathematics*. Expanded Amer. Ed. (Also: *2. ed. 1986,* 1.ed. 1971, page numbers vary)<br>Chapter 2 **The formation of mathematical concepts**, p. 9 -21    **Required**<br>Chapter 3 **The idea of a schema**, only p. 22-29    **Required**<br>Chapter 5 **Symbols**, p. 46-55    **Required**<br>Excellent general introduction to the structure of knowledge and its representation and the nature of concepts, applicable to any subject, not just math. Read carefully. | □ |
| **Lecture** | **Read the lecture notes** like a book chapter - no slides | □ |

| | 2.2  Knowledge representation | |
|---|---|---|
| **Readings** | 1 **Lecture2.2 Objectives etc**. (pink) | □ |
| | 2 Textbook Section 9.3 **Criteria for the design and evaluation of data schemas** (p. 150-152) | □ |
| | 3 Lindsay &  Norman. *Human information processing. Intro to psych.* NY: Ac. Pr., 1972.<br>Chapter 10. **The structure of memory (semantic networks, DS),** p. 374-401<br>Chapter 11. **Memory processes [restructuring semantic networks]**, p. 402-434 | ○ |
| | 4 Jonassen, David H.; Beissner, Katherine; Yacci, Michael. Structural knowledge: Techniques for representing, conveying and acquiring structural knowledge. Hillsdale, NJ: Lawrence Erlbaum, 1993.<br>Ch. 12. **Implicit methods for conveying structural knowledge through frames and slots,** p. 125-133. | □ |
| | 5 Parsaye, Kamran; Chignall, Mark. *Expert systems for experts*. New York:  John Wiley and Sons, 1988. Section 2.2.3. **Frames: Packaged Structures**, p. 48-57 | ○ |
| | 6 Fikes, Richard and Kehler, Tom. **The role of frame-based representation in reasoning**. Communications of the ACM. 1985;  28(9): 904-920. | ○ |
| **Lecture** | **Read the lecture notes** like a book chapter - no slides | □ |

**over**

| Learning blog | Learning blog Week 2 due February 3 | ○ |

| Assignments assigned W. February 3 | |
|---|---|
| Assignments assigned | ‣Assignment 4,  **Restructuring two sets of data using hierarchical inheritance** (1.5 hours)  (Due `Feb. 10) |

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**Week 3.  February 3 - February 10**

Part 2.
**Structure and evaluation of information systems**

red                              **Things to do in Week 3, W February 3 - February 10**

| Assignments due W. Feb. 10 □ required  ○ optional | √ |
|---|---|
| **Review answer key(s)** | None | |
| **Assignment(s)** | Assignment 1: Hypermedia exploration: Perseus and Freebase (2.5 h) (ass. `Jan. 27, L1.2) | □ |
| | Assignment 2: Bibliogr. retrieval system exploration.: MEDLINE (3 h)(ass. `Jan. 27, L1.2) | □ |
| | Assignment 3: Online catalog search exercise (1.5 hours)  (ass. `Jan. 27, L1.2) | □ |
| | Assignment 4: Restructure set of data. Restructured DB. □  network □ (1.5h) (ass. `Feb. 3, L2.2) | □ |

| New topics this week |
|---|

| 3.1 The structure of information systems | |
|---|---|
| *Readings* | 1  **Lecture 3.1 Objectives etc**. (pink). Also have a look at Assignment 5 | □ |
| | 2  Textbook **Ch. 5 The Structure of Information Systems** | □ |
| **Lecture** | **Lecture 3.1 slides** | □ |

| 3.2 Objectives and performance measures for info. systems | |
|---|---|
| *Readings* | 1  Lecture 3.2 Objectives etc. (pink) | □ |
| | 2  Textbook Ch. 6 **Systems Analysis** | □ |
| | 3  Textbook Ch. 7 **Assessment of users' problems and needs** | □ |
| | 4  Textbook Ch. 8 **Objectives and performance measures for ISAR systems** (for discussion) | □ |
| **Lecture** | **Lecture 3.2 slides** (80 min) | □ |

| **Learning blog** | Learning blog Week 3 due February 10 | ○ |
|---|---|---|

| Assignments assigned February 10 | |
|---|---|
| **Assignments assigned** | ‣**Assignment 5, Analytical description of an information system** (3 hours) (due `Feb. 17) |

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**Weeks 4 - 5. February 10 - February 24**

Part 3.
**Information Retrieval**
**General principles and methods**

red                    **Things to do in Week 4, W February 10 - February 17**

| | **Assignments due W February 17**  □ **required**  ○ **optional** | √ |
|---|---|---|
| **Review answer key(s)** | Assignment 1: Hypermedia exploration: Perseus and Freebase        (assigned L1.2, `Jan. 27) | □ |
| | Assignment 2: Bibliographic retrieval system exploration: MEDLINE (assgnd L1.2, `Jan. 27) | □ |
| | Assignment 3: Online catalog search exercise                      (assigned. L1.2, `Jan. 27) | □ |
| | Assignment 4: Restructuring a set of data in db and sem. net representation (ass.. L2.2, `Feb. 3) | □ |
| **Assignment(s)** | Assignment 5: Analytical description of an information system (3 hrs) (assgnd. L3.1, `Feb. 10) | □ |

| | **New topics this week** |
|---|---|

| | **4.1  Searching linked data. Integrated information structure model** | |
|---|---|---|
| *Readings* | 1 **Lecture 4.1 Objectives etc**. (pink). Also have a look at Assignment 6. | □ |
| | 2 Soergel **Searching Linked Data**  Prologue and p. 1 - 17, **have at hand** | □ |
| | 3 Soergel **Language of Foods** | ○ |
| **Lecture** | **Lecture 4.1 slides** (65 min) | □ |

| | **4.2a Data schemas and formats. Review** | |
|---|---|---|
| *Readings* | 1 **Lecture 4.2a Objectives etc**. (pink) | □ |
| | 2 Textbook Ch. 3 **Structure Of Information** | □ |
| | 3 Textbook Ch. 9 **Data Schemas and Formats** | □ |
| | 4  **Model Catalo**g (very first Reading in packet) (useful to look at) | □ |
| **Lecture** | **Lecture 4.2a slides** (30 min) | □ |

| | **4.2b Data schemas and formats. In-lecture exercise** | |
|---|---|---|
| **Lecture** | **Lecture 4.2b slides** (30 min) | □ |

| **Learning blog** | Learning blog Week 4 due February 17 | ○ |
|---|---|---|

| | Assignments assigned W Feb. 17 | |
|---|---|---|
| **Assignments assigned** | ‣**Assignment 6, Developing a conceptual data schema** (1.5 hours)(due `Feb. 24)<br><br>‣**Feedback quiz**  (30 min.)(due `Feb. 24) | |