

IS 586 Information Retrieval Systems

Fall 2005

Instructor: Peiling Wang, Ph.D.
Place & Time: Communications 314; Tuesday & Thursday, 3:40 – 4:55 p.m.
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Catalog Description (Revision in Progress)

Historical perspective on information retrieval research; statistical and probabilistic retrieval techniques; cognitive user modeling; expert intermediary systems; associations, relations and hypertext.

Goals/Objectives

- Understand different perspectives of IR (information retrieval): cognitive view and physical paradigm.
- Understand user needs and information seeking (IS) behaviors
- Understand system approach to IR (classic IR models)
- Be able to integrate findings from user studies into system design
- Be able to evaluate existing IR systems from user-centered approach
- Be able to identify problems and propose well-founded solutions

Course Materials

Case, Donald O. (2002) *Looking for Information: A Survey of Research on Information Seeking, Needs, and Behavior*. Amsterdam: Academic Press. ISBN: 0-12-150381-X [Selected chapters; E-book available at Hodges Library]

Peter Ingwersen (1992). *Information Retrieval Interaction*. London: Taylor Graham. ISBN: 0-947568-54-9 [Selected chapters; Available free from the author's Website <http://www.db.dk/pi/iri/>]

Riccardo Baeza-Yates & Berthier Ribeiro-Neto (1999). *Modern Information Retrieval* NY: Addison-Wesley. ISBN: 0-201-39829-X. [Selected chapters; available at Hodges online reserve: search "IS586" and select "Course Abbreviation."]

Assignments and Evaluation

1. *Class Participation (5%)*

This includes both attendance and participation in discussion in classroom and virtual classroom.

2. *Hands-on Project (30%)*

Students will work in team to complete a hands-on project. The project may tackle an aspect of IR (physical paradigm), such as functional requirements of an IR system for a well-defined context of use or a specific component of an IR (metadata scheme, search function for a Website, etc.) Students should discuss the potential projects with the instructor within six weeks of the semester.

3. *Roundtable Discussion (25%)*

Students will lead in-depth discussion on selected topics. Each student or a team will select a topic of interest to organize and moderate a roundtable session. The topic can be the same topic as your research paper (see below) or any topic of your interest in IS and IR. I will guide you in planning roundtable sessions.

4. *Research Paper (40%)*

Each student will work independently on a topic of interest to produce one of the following: a comprehensive literature review, a research proposal (for thesis or dissertation), or a short/poster paper of a mini research project.

5. *Bonus*

You may earn extra points through participation in a research project. Details will be given in class.

6. *Evaluation and Grading*

Grading by its very nature is a subjective process, and it is virtually impossible to design exercises that can be objectively quantified with precise numeric scores. To help you improve your work, I will review early drafts to provide you with my feedback if you allow me a weekend turn-around.

A	4.0	>92	Excellent	B+	3.5	86-92	Very good
B	3.0	80-85	Good	C+	2.5	75-79	Satisfactory
C	2.0	70-74	Below Standard	D	1.0	<70	Unsatisfactory

Academic Integrity

“The responsibility for learning is an individual matter. Study, preparation and presentation should involve at all times the student’s own work, unless it has been clearly specified that work is to be a team effort. Academic honesty requires that all work presented be the student’s own work, not only on tests, but in themes, papers, homework, and class presentation. ...” (*Hilltopics* Student Handbook, The University of Tennessee, Knoxville; <http://web.utk.edu/~homepage/hilltopics>). Cheating, plagiarism, providing unauthorized help and other acts of dishonesty violate the rule of academic honesty; the offender will be subject to penalties as set forth in *Hilltopics*.

Special Needs

If you need course adaptations or accommodations because of a documented disability or if you have emergency information to share, please contact the Office of Disability Service at 191 Hoskins Library or at (865) 974-6087. This will ensure that you are properly registered for services.

Policy on Inclement Weather or Emergency

If the university is officially closed, classes will be canceled. I may arrange to extend sessions after the missed session or schedule a make-up session. Any type of arrangements will be discussed with you in advance and announced in class or via e-mail.

Blackboard

Blackboard will be used to facilitate teaching and collaboration. If you run into problems, please let me know.

<https://blackboard.utk.edu/webapps/login/>

Schedule (*Subject to change due to unforeseen circumstances*)

[Reading assigned for the week include or support the concepts delivered in that week]

- 8/25** Welcome and Survey of Background
Reading: Case's Chapter 1 (catch up)
- 8/30 & 9/1** Information-seeking (IS): User-centered perspective
Reading: Case's Chapters 3 & 4
- 9/6 & 8** Context and Cognitive View
Reading: Ingwersen's Chapters 1 & 2
Signup for Roundtable discussion
- 9/13 & 15** Research Methodologies & Methods
Reading: Wang, Peiling. Methodologies and methods for user behavioral research. Williams, Martha E., Ed. Annual review of information science and technology. Medford, NJ: Information Today; 2001; pp. 53-99. [<http://web.utk.edu/~peilingw/nordic/pdf/arist.pdf>]
Ellis, David. Modeling the information-seeking patterns of academic researchers: A grounded theory approach. Library Quarterly. 1993, 63(4):469-486. [E-journal online at Hodges]
- 9/20 & 22**
9/27 & 29 Information-Seeking (IS) Models
Reading: Case's Chapter 6; Ingwersen's Chapter 6
Recommended Reading: Bates, Marcia J. "[The Design of Browsing and Berrypicking Techniques for the Online Search Interface.](#)" Online Review 13 (October 1989): 407-424.
(<http://www.gseis.ucla.edu/faculty/bates/berrypicking.html>)
- 10/4 & 6 & 11** Roundtable discussion (Students-lead)
Reading: All previously assigned
- 10/13** Fall break
- 10/18 & 20** Information Retrieval (IR) Models: Physical Paradigm
Reading: Baeza-Yates & Ribeiro-Neto's Chapters 1 & 14
- 10/25 & 27** IR Evaluation Projects
Reading: Baeza-Yates & Ribeiro-Neto's Chapter 3

- 11/1 & 3* IR at Operational Level
Reading: Baeza-Yates & Ribeiro-Neto's Chapter 4
- 11/8 & 10* IR in the Internet Age (Web IR)
Reading: Baeza-Yates & Ribeiro-Neto's Chapter 13
- 11/15 & 17* IR and Digital Libraries (Research Agenda)
- 11/22* Hands-on Projects
Reading: TBA
- 11/24* Thanksgiving Holiday
- 11/29 & 12/1* Integration of IS and IR Research: Usefulness vs. Usability
Reading: TBA
- 12/6 & 8* Project presentation
DUE: Paper