UNIVERSITY OF WISCONSIN-MILWAUKEE
SCHOOL OF INFORMATION STUDIES

891 – Advanced Topics in Library and Information Science:
Informetrics and Scholarly Communication
Syllabus – Spring 2013

DRAFT

Instructor: Dietmar Wolfram  Office: NWQ Bldg B Rm 3569
E-mail: dwolfram@uwm.edu  Phone: 414-229-6836
Fax: 414-229-6699

Meeting Times: This is a Web-based course. The mode of instruction and communication will be primarily asynchronous. There will be selected synchronous aspects of the course involving Adobe Connect or other similar tools. Meeting times for synchronous components will be determined based on class member and presenter availability.

Office Hours: TBA

DESCRIPTION:

Provides advanced treatment of scholarly communication, the quantitative study of information production and use, informetric data modeling, research assessment, and applications in information studies scholarship and practice.

3 credits

PREREQUISITES: Grad st; Foundations course in library and information science (e.g., L&I Sci 501); Research methods or statistical methods course for the social sciences (e.g., L&I Sci 591); or permission of the instructor.

OBJECTIVES: Upon completion of the course, students will be able to:

- Understand and analyze developments in scholarly communication and informetrics
- Assess the role of library and information science in the process of scholarly communication
- Analyze regularities in the way information is produced and used
- Synthesize and apply informetric techniques to the analysis of recorded discourse
- Critically evaluate information resources and activities relevant to scholarly communication
- Apply quantitative techniques to the assessment of research and scholarship

ALA COMPETENCIES: This course addresses the following ALA competencies:

- Concepts and issues related to the lifecycle of recorded knowledge and information, from creation through various stages of use to disposition.
The application of information, communication, assistive, and related technology and tools consistent with professional ethics and prevailing service norms and applications. (Note: This is relevant to the application of cybermetric methods and data collection).

- The fundamentals of quantitative and qualitative research methods.
- The central research findings and research literature of the field.

**METHOD:** Lecture/Seminar

Students with special needs should contact the instructor as early as possible for accommodations.

**TEXT**


Readings also will be assigned from sources available through traditional or electronic reserve at the UW-Milwaukee Golda Meir Library or publicly on the Web.

There are required readings for each week plus suggested readings for those interested in learning more about the specific topics.

**COURSE SCHEDULE AND READINGS:**

**Week 1/22**  
**Overview - The Study of Information Production and Use, History and Current Status**

Required:


- Bar-Ilan, J. (2008). Informetrics at the beginning of the 21st century - A review. *Journal of Informetrics*, 2(1), 1-52. Note: This is a long review article. Browse to become familiar with the different areas of informetrics.

**Suggested Additional Readings:**


1/28  **Scholarly Communication**

**Required:**


**Suggested Additional Readings:**


2/4  **Classic Informetric Laws and Areas of Study**

**Required:**

De Bellis, Chapter 4


**Suggested Additional Readings:**


2/11  **Citation Analysis I**

**Required:**
De Bellis, Chapters 2 & 3


**Suggested Additional Readings:**


**Citation Analysis II – Co-citation Analysis and Impact Factors**

**Required:**

De Bellis, Chapters 5 & 6 (some of the content of Chapter 5 will also be useful in Week 6).


**Suggested Additional Readings:**


2/25

**Mapping Scholarly Communication & Knowledge Domains**

**Required:**


**Suggested Additional Readings:**


3/4

**Social Network Analysis in Scholarly Communication**

**Required:**


**Suggested Additional Readings:**


3/11  Language Use & Text Studies

Required:


Suggested Additional Readings:


3/18  Spring Recess – No Class

3/25  Metrics Research in the Internet Age: Cybermetrics/Webometrics/Altmetrics

Required:

De Bellis, Chapter 8


Suggested Additional Readings:


Data Collection Tools for Informetric Analysis

Required:


Suggested Additional Readings:


4/8  Metrics Applied - Indicators

**Required:**


**Suggested Additional Readings:**


4/15  Applications for Information Agencies and Policy Development

**Required:**


Browse one of the following sites to become acquainted with national research assessment efforts:
United Kingdom - Research Excellence Framework http://www.hefce.ac.uk/research/ref/
Australia - Excellence in Research for Australia http://www.arc.gov.au/era/

**Suggested Additional Readings:**


4/22 **Applications for Information Retrieval**

**Required:**


**Suggested Additional Readings:**


4/29 **Assessing Information Production and Use in the 21st Century**

**Required:**


**Suggested Additional Readings:**


Thelwall, M., & Harries, G. (2004). Do the Web sites of higher rated scholars have significantly more online impact? *Journal of the American Society for Information Science and Technology, 55*(2), 149-159.

5/6 **Discussion of Projects/ Review**

No readings

**ACADEMIC POLICIES**

Academic policies may be found on the UWM Web site at: http://www.uwm.edu/Dept/Acad_Aff/policy/uniformssyllabus.html. Additional policies may be found at the end of the syllabus.

**ASSIGNMENTS**

Assignments are due on the specified dates. Grades will be reduced for late papers (one full grade for each week or part thereof) unless there are extenuating circumstances. Written assignments are to be word-processed. Submissions are to be double-spaced using a 12-point font with 1 to 1.25 inch margins.
You may not resubmit work that has already been used in fulfillment of the requirement of this or any other course. Rules of academic conduct require that you not use the work of others without clearly indicating it as such. Academic misconduct may result in a lowered grade, no credit for a given assignment, or removal from the course. It is expected students will consult and appropriately cite the research and professional literature where appropriate. Grades will also be reduced for papers that include irrelevant content to “fill up space” to meet the length specifications for a paper. An example of this practice is submitting a paper that presents a cursory treatment of several topics when a detailed treatment of a single topic is expected.

Please rely on a commonly used style manual for your submissions (e.g. Turabian, Chicago, APA, MLA). These are available in the UWM Bookstore or may be purchased through online book vendors. If you are uncertain about how to cite electronic sources, consult one of the many electronic guides to citing electronic sources available on the net. Minimal reference content includes: author (if known), date (if given), title, URL, and date accessed. A good starting point is available at: http://www.libraryspot.com/grammarstyle.htm.

1. **ESSAY ON INFORMETRIC LAWS - Due Week 5**  

Select a classic “law” of informetrics (e.g., Bradford, Zipf, Lotka, Price, Garfield, Leimkuhler, Urquhart). Develop a review of the literature available on the topic, focusing on pioneering pieces, and a selection of more recent works. How has understanding of the phenomenon described by the law changed over time? What is the current state of model development for this law? Identify examples of applications of this law for understanding and evaluating the production of information and associated services.

Your paper should be approximately 7 double-spaced pages, excluding your bibliography. Your developed bibliographies, along with a brief abstract of your paper (250-300 words), will be shared with class members on D2L.

2. **DATA MODELING EXERCISE – Due Week 10**  

You will be given sets of data in MS Excel format (OpenOffice Calc may also be used) representing different informetric phenomena as well as several mathematical models to be fitted to the data. Evaluate the effectiveness of the models for describing the distributions observed in the data sets. Examine the range of distribution shapes that may be modeled by varying key parameters and observing the changes in the distributions. Along with a completed spreadsheet with modeling outcomes, submit a 4 to 5 page analysis of the data sets, identifying the best models that describe the observed data, and whether each distribution is adequate to model the observed data. In your analysis, explain why specific models are well or not well suited for describing the data.

3. **FINAL PROJECT - Due in two parts**  

Individuals or small groups of students will select a quantifiable aspect of information production or use relevant to scholarly communication or informetrics. Each group will identify one or two research questions relevant to the phenomenon of interest, and conduct a small scale study as their final project. Depending on the topic selected, public data sources may be available, or will need to be collected using appropriate tools (e.g., bibliographic databases, crawler software).

3.1 **Topic Proposal - Due Week 7**  

The initial submission will serve as a foundation for the final project. It will consist of a one to two-page summary of the topic area to be investigated, an informative title, one or two research questions, and a bibliography of 15-20 sources to demonstrate the adequacy of foundational materials on which to undertake the study. Initial feedback from the instructor will help the student(s) to ensure a viable topic with a manageable scope has been selected.

3.2 Completed paper – Due Week 15

Structure your paper as an empirical investigative analysis of the phenomenon selected, defining the scope of your investigation, related research, the methodology used, modeling techniques used (where appropriate), findings, and conclusions discussing any applications. The submitted paper should be approximately 15-20 pages long, excluding appendices and references. This project will be conducted in groups of no more than three people. Those opting to working in groups will be expected to have completed a more detailed study.

CLASS PARTICIPATION

It is expected that students will be active participants in the weekly discussions in class, along with at least a subset of the guest chats. Participation implies discussion contributions that are productive and insightful, and that integrate the weekly readings.

EVALUATION

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ADDITIONAL READINGS AND INFORMATION SOURCES

Monographs


The MIT Press. ZA4226 .H83 2001


**Professional Societies**

American Society for Information Science and Technology (ASIS&T) – www.asis.org

Canadian Society for Information Science/L’association canadienne des sciences de l’information (CAIS-ACSI) – www.cais- acsi.ca

The International Society for Scientometrics and Informetrics (ISSI) - www.issi-society.info

Society for Social Studies of Science (4S) - http://www.4sonline.org/

**Relevant Journals**

Most library and information science journals publish articles with a metrics or scholarly communication theme. Specific journals with primarily metrics-themed content include:

*COLLNET Journal of Scientometrics and Information Management* - [http://www.tarupublications.com/journals/cjsim/cjsim.htm](http://www.tarupublications.com/journals/cjsim/cjsim.htm)

*Cybermetrics* (open access) - [http://www.cindoc.csic.es/cybermetrics/cybermetrics.html](http://www.cindoc.csic.es/cybermetrics/cybermetrics.html)

*ISSI Newsletter* - [http://www.issi-society.info/newsletter.html](http://www.issi-society.info/newsletter.html)


*Scientometrics* - [http://www.springer.com/computer/database+management+%26+information+retrieval/journal/11192](http://www.springer.com/computer/database+management+%26+information+retrieval/journal/11192)

*Webology* (open access) - [http://www.webology.ir/](http://www.webology.ir/)

**UWM ACADEMIC POLICIES**

The following links contain university policies affecting all SOIS students. Many of the links below may be accessed through a PDF-document maintained by the Secretary of the University: [http://www.uwm.edu/Dept/SecU/SyllabusLinks.pdf](http://www.uwm.edu/Dept/SecU/SyllabusLinks.pdf). It contains information on policies regarding students with disabilities, religious observances, students called to active military duty, incompletes, discriminatory conduct, academic misconduct, complaints, grade appeal procedures, and examinations/finals. For graduate students, there are additional guidelines from the Graduate School ([http://www.uwm.edu/Dept/Grad_Sch/StudentInfo/](http://www.uwm.edu/Dept/Grad_Sch/StudentInfo/)), including those found in the *Graduate Student and Faculty Handbook*: [http://www.uwm.edu/Dept/Grad_Sch/Publications/Handbook/](http://www.uwm.edu/Dept/Grad_Sch/Publications/Handbook/).