

Draft Syllabus

(As approved by the M. Phil. Committee in its 2nd meeting held on 17.08.2007)

M. Phil

in

Library and Information Science

**Department of Library and Information Science
The University of Burdwan
Golapbag, Burdwan**

Objectives of the Courseware

- To act as foundation course for research and development in Library and Information Science
- To prepare specialized professional manpower for managing changes in information organisation and access to information
- To understand and articulate the role and importance of research in Library and Information Science
- To explore feasibility of application of ICT in general and Web technologies in particular for information organisation and access
- To enable the students to design and develop information systems and services in emerging disciplines

Structure of the Courseware

Semester I

Course	Course Title	Full Marks
Paper I	Research Methodology and Digital Information Resources on Library and Information Science <u>Group A:</u> Research Methodology <u>Group B:</u> Digital Information Resources on Library and Information Science	100
Term Paper	Related Term Paper	25
Seminar	Related Seminar	25
Total Marks in Semester I		150

Semester II

Course	Course Title	Full Marks
Paper II	<u>Optional I</u>	100
(One Optional Paper is to be opted)	Digital Library System	
	<u>Optional II</u>	
	Information Management and Knowledge Organisation	
Term Paper	Related Term Paper	25
Seminar	Related Seminar	25
Total Marks in Semester II		150
☛ Initiation of Dissertation Work		

Semester III

Course	Course Title	Full Marks
Paper III	Dissertation	200
	Text (Marks 150)	
	Viva (Marks 50)	
Total Marks in Semester III		200
GRAND TOTAL		500

Paper I: Research Methodology and Digital Information Resources on Library and Information Science

Structure

Full Marks: 100 Lecture Hours: 50 Hours

Group A: Research Methodology
(Full Marks: 50; Hours: 25)

Group B: Digital Information Resources on Library and Information Science
(Full Marks: 50; Hours: 25)

Objectives

- To introduce the different methods and techniques of research
 - To familiarise in the use of data organisation and representation skills
 - To understand trends of research in Library and Information Science
 - To identify and use of digital information resources on LIS
 - To know the value and applications of interactive Web resources on LIS
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Group A: Research Methodology

Full marks: 50

Hours: 25 hours

Units

Lecture Hours

Unit I: Research: Meaning, Design and Methods

5

- Meaning, Need, Types.
- Problem formulation, Hypothesis
- Designing Research Proposal
- Methods - Scientific, Experimental, Historical, Descriptive, Survey
- Operations Research in LIS and Projective Techniques

Unit II: Research Data: Collection, Organisation, Analysis and Interpretation 10

- Data Collection Tools and Techniques: Sampling, Observation, Questionnaire, Interview, Schedule
- Data Organisation: Tabulation, Graphical representation
- Data Analysis and Interpretation: Statistical analysis (Including Frequency Distribution, Measures of Central Tendency, Dispersion, Standard Deviation, Correlation, Regression, Time-Series analysis)
- Measurement and Scaling Techniques
- Index Number

Unit III: Research Communication and Trends in LIS Research 10

- Writing Research Report: Structure, Style, Contents, and Citation
- Close and Open Access Research Publications
- Electronic Theses and Dissertations
- Trends in LIS Research – Global
- Trends in LIS Research – National

Group B: Digital Information Resources on Library and Information Science Full marks: 50 Hours: 25 hours

Units

Lecture Hours

Unit IV: Generic Digital Information Resources on LIS 7

- Information Resources: Nature, Features and Types
- Institute-oriented Digital Information Resources: Including Library Associations, Library Schools, Subject Gateways and Digital Libraries on LIS, Subject Directories in Web, Journal Portals, Publisher’s Portals, Book Reviews, Book Selection
- Virtual Reference Tools: Commercial Tools (e.g. Xrefer.com), Cross-Publishers Platforms for Reference Sources, Open Access Reference Tools, Yellow pages, White Pages, Library Directories (e.g. LibDex), Dictionaries, Acronyms, Glossary etc.
- Socio-Legal Information Sources: IPR related Information, Sherpa-Romeo project, IFLANET – CLM (Copyright and Legal Matters) and FAIFE (Free Access to Information and Freedom of Expression)

Unit V: Interactive Digital Information Resources on LIS 9

- Interactive Digital Information Resources: Nature, Features and Types
- LIS Discussion Forums and Mailing Lists (ListServes) – LIS in general and Lists related to second order divisions (Classification, Cataloguing, Reference, Computer applications, Digital library, Institutional repository etc.)
- Blogs and Biblioblogsphere: Nature, Features, Types, Projects and Services
- Wikis and Wikipedias in LIS: Nature, Features, Types, Projects and Services
- Library 2.0 Tools: Information Mashup, Flickr, YouTube, Social Software

Unit VI: Digital Information Resources on LIS Education, Training and Research 9

- LIS Education and Training: Tutorials, Guided Training Programmes, Virtual Classrooms (WebCT, Blackboard etc.), Bibliographies, Reading lists, LIS Courseware, Multimedia Training Kits
- LIS Research: Electronic Theses and Dissertations on LIS (NDLTD, LDL, VidyaNidhi, Theses.com etc.), Citation Tools (e.g. CiteSeer), Virtual Union Catalogue (Macro and Micro levels), Research Guides (Proposal, Planning, Design, Budget etc.)
- Digital Channels of Research Publications
- Virtual Learning Environment (VLE) on LIS

Recommended Readings

Paper I: Research Methodology and Digital Information Resources on Library and Information Science

Group A: Research Methodology

1. Busha, Charles A. & Harter, Stephen P.: *Research Methods in Librarianship: Techniques and Interpretations*. New York: Academic Press, 1980.
2. Egghe, L. & Rousseau, R.: *Introduction to Informetrics: Quantitative Methods in Library, Documentation and Information Science*. Amsterdam: Elsevier, 1990.
3. Glazier, Jack D. & Hall, Peter M., eds.: *Qualitative Research in Information Management*. Englewood, CO: Libraries Unlimited, 1992.
4. Gorman, G.E. & Clayton, Peter: *Qualitative research for the information professional: a practical handbook*. 2nd ed. London: Facet Publishing, 1997.
5. Hafner, Arthur W. *Descriptive Statistical Techniques for Librarians*. 2nd ed. Chicago: American Library Association, 1997.
6. Herson, Peter & Richardson, John V., eds.: *Microcomputer Software for Performing Statistical Analysis: A Handbook Supporting Library Decision Making*. Norwood, NJ: Ablex Publishing Corporation, 1988.
7. Kraft, Donald H. & Boyce, Bert R.: *Operations Research for Libraries and Information Agencies: Techniques for the Evaluation of Management Decision Alternatives*. San Diego: Academic Press, 1991.
8. Losee, Robert M., Jr. & Worley, Karen A.: *Research and Evaluation for Information Professionals*. San Diego: Academic Press, 1993.
9. Lynam, Peter, Slater, Margaret & Walker, Rennie: *Research and the Practitioner: Dissemination of Research Results within the Library-Information Profession*. London: Aslib, 1982.
10. Martyn, John & Lancaster, F. Wilfrid: *Investigative Methods in Library and Information Science: An Introduction*. Arlington, VA: Information Resources Press, 1981.
11. McClure, Charles R. & Herson, Peter, eds.: *Library and Information Science Research: Perspectives and Strategies for Improvement*. Norwood, NJ: Ablex Publishing Corporation, 1991.
12. Mellon, Constance A.: *Naturalistic Inquiry for Library Science: Methods and Applications for Research, Evaluation, and Teaching*. New York: Greenwood, 1990.
13. Moore, Nick: *How to Do Research*. 2nd ed. London: Library Association,
14. Powell, Ronald R.: *Basic Research Methods for Librarians*. 3rd ed. Greenwich, CT: Ablex Publishing Corporation, 1997.
15. Prytherch, Ray: *Information Management and Library Science: A Guide to the Literature*. Brookfield, VT: Gower, 1994.
16. Slater, Margaret, ed.: *Research Methods in Library and Information Studies*. London: Library Association, 1990.
17. Stephen, Peter & Hornby, Susan: *Simple Statistics for Library and Information Professionals*. London: Library Association, 1995.

Group B: Digital Information Resources on Library and Information Science

18. Carnaby, P: *Next generation e-learning and digital information resources*. Buenos Aires: IFLA, 2004. <Available at <http://www.ifla.org/IV/ifla70/prog04.htm>>
19. Casey, M. E. & Savastinuk, L. C.: Library 2.0: Service for the next-generation library. *Library Journal*, 26. <Available at <http://www.libraryjournal.com/article/CA6365200.html>>
20. Directory of Open Access Journals (DOAJ): <http://www.doaj.org>

21. FAO & UNESCO: *Digitization and digital libraries module (in CDROM)*. Rome: FAO, 2005.
22. FAO & UNESCO: *Management of electronic documents module (in CDROM)*. Rome: FAO, 2005
23. Lenhart, A., Fallows, D., & Horrigan, J.: *Content Creation Online: 44% of U.S. Internet users have contributed their thoughts and their files to the online world*. <Available at http://www.pewinternet.org/pdfs/PIP_Content_Creation_Report.pdf>
24. LIS Core Cluster: <http://www.db.dk/>
25. LISWiki. Web site: <http://liswiki.org/wiki/>
26. Maness, J. M.: *Library 2.0 Theory: Web 2.0 and Its Implications for Libraries*. *Webology*, 3(2), 2006. <Available at <http://www.webology.ir/2006/v3n2/a25.html>>
27. Montague, R.: *Web-based information science education (WISE)*. Oslo: IFLA, 2005. <Available at <http://www.ifla.org/IV/ifla71/Programme.htm>>
28. Stephens, M.: *ALA TechSource - Do Libraries Matter: On Library & Librarian 2.0*. <Available at <http://www.techsource.ala.org/blog/2005/11/do-libraries-matter-on-library-librarian-20.html> >
29. TICER courses on digitization: <http://www.ticer.nl/>
30. Wellman, B., & Haythornthwaite, C. eds.: *The Internet in everyday life*. Malden, MA: Blackwell, 2002.
31. Wiki: <http://en.wikipedia.com/wiki/>
32. World list of LIS schools: <http://informationr.net/wl/>

Paper II: Digital Library System (Optional I)

Structure

Full Marks: 100 Lecture Hours: 50 Hours

Objectives

- To acquaint the students with the concepts of digital and virtual library
- To develop skills in organisation of digital information bearing objects
- To understand major issues in architecture, retrieval and user interface
- To know the process of design and development of digital library systems
- To familiarise students with multiscrypt/multilingual library systems

Units

Lecture Hours

Unit I: Historical and Theoretical Foundations

10

- Nature, concepts, scopes, definitions and types of digital libraries
- History of digital library initiatives, institutional repositories and open knowledge movement
- Social, legal and economic issues
- Digital information resources and Digital archiving
 - Digital information resources – features, types and bitstream formats
 - Analog (traditional) vs. Digital information resources
 - Digital archiving – features, advantages and applications
- Traditional, automated, digital and virtual library systems – comparative study

Unit II: Organisation of Digital Objects

10

- Metadata – generic and domain-specific schemas (Including DCMES, GILS, AGLS, ONIX, TEI, IEEE LOM, GEMS, SeamlessUK etc.)
- Metadata encoding –
 - Markup languages – HTML, XHTML, XML
 - Encoding standards – W3C and IETF standards
 - Resource Description Framework (RDF)
- Resource identifiers (Naming services) – URN, URI, CNRI's handle, PURL, DOI
- Subject access systems – standards and tools
- Crosswalks and Interoperability
 - Crosswalks of metadata schemas

- Interoperability – OAI/PMH, Z 39.50, ZING and SRW; OAI/PMH Vs. Z 39.50

Unit III: Architecture, Information Retrieval and User interfaces **10**

- Web architecture
 - Distributed information system (Internet) – architecture, standards, protocols and tools
 - World Wide Web – features, services, standards, protocols, tools and services
 - Web technologies and access systems
 - Common Gateway Interface (CGI) – architecture and programming tools (PERL, PHP, JSP)
- Web databases
 - Web-enabled DBMS – Relational and Bibliographic DBMS
 - Technologies, standards and tools
 - Products and services
- Architecture of digital library systems
 - Design issues
 - Design principles
 - Models
- Information retrieval in digital library systems
 - Information retrieval models for digital library systems
 - Use of vocabulary control devices
 - Text retrieval tools – types, features and comparisons (Lucene, MGPP, HTDig, SWISH-e)
 - Search techniques – Boolean, relational and positional operators (including Post Boolean development)
 - Study of information retrieval features of selected digital library systems
- User interfaces of digital library systems
 - Information seeking behaviour - models
 - Information access framework
 - Design issues, principles and standards
 - Study of user interfaces of selected digital library systems

Unit IV: Design and Development of Digital Library System **10**

- Digitization and Collection development
 - Hardware
 - Software
 - Process
 - File formats
 - Issues, policies and principles
 - Collection management

- Tools for developing digital library systems
 - Free/Libre Open Source Software (FLOSS)
 - Systems software – Unix-like operating systems (Unices)
 - Application software – LAMP/XAMP architecture
 - Social networking tools – Web 2.0 and Library 2.0
 - Open standards
 - Standards related to digital library systems
 - Standards for multilingual digital library systems
 - Design principles
- Centralized processing and distributed access systems
 - Software – GSDL, MyLibrary, WWWISIS, GENISIS etc.
 - Building Process
 - Customization and user interface
- Distributed processing and distributed access systems
 - Software – DSpace, E-Print Archive, Fedora etc.
 - Building Process
 - Customization and user interface
- Evaluation of digital library systems
 - National digital library systems
 - International digital library systems
 - Evaluation parameters and models
 - Evaluation of selected digital library systems

Unit V: Indic script based digital library systems

10

- Multilingual digital library systems – concepts, features, needs
- Indic scripts and script encoding technologies
- Multilingual standards and tools –
 - Unicode text encoding standard
 - Rendering engines
 - Open type fonts
- Application of open source software and open standards
- Building process and customization techniques

Recommended Readings

Paper II: Digital Library System (Optional I)

1. Argerich, K.: *Professional PHP programming*. Mumbai: SPD/Apress Reprints, 2004.
2. Arms, W.: *Digital libraries*. Cambridge MA: MIT Press, 2000.
3. Bayross, I.: *Using Apache, MySQL, PHP and PERL on Linux*. New Delhi: BPB Publications, 2000.
4. Bayross, I.: *Using MySQL on Linux*. New Delhi: BPB Publications, 2004.
5. Bhatnagar, S.: *Information and communication technology in development: cases from India*. New Delhi: Sage, 2002.
6. Birbeck, M. and Duckett, J.: *Professional XML (2nd ed.)*. Mumbai: Shrof Publishers, 2004.
7. Borgman, G.L.: *From Gutenberg to the global information infrastructure: access to information in networked world*. Cambridge MA: MIT Press, 2000.
8. Briggs, A.: *The definitive guide to user mode Linux*. Mumbai: Shrof Publishers, 2005.
9. Brophy, P.: *The library in the twenty-first century*. London: Library Association, 2001.
10. Caplan, Priscilla: *Metadata fundamentals for all librarians*. Chicago: ALA, 2000.
11. Chowdhury, G.G. & Chowdhury, S.: *Introduction to digital libraries*. London: Facet Publishing, 2003.
12. Crawford, W. and Gorman, M.: *Future libraries: dreams, madness, and reality*. Chicago: ALA, 1995.
13. Deegan, M. & Tanner, S.: *Digital futures: strategies for the information age*. London: Library Association, 2003.
14. Fabisoff, S.G., & Ely, D.P.: *Information and information needs*. Washington D.C: US Office of Education, 1974.
15. Gorman, G.E. & Dorner, D.G.: *Metadata applications and management*. London: Facet Publishing, 2004.
16. Lesk, M.: *Practical digital libraries: books, bytes and bucks*. San Francisco: Morgan Kaufmann, 1997.
17. Library Trends: *Special issue: Assessing digital library services* (Edited by Thomas A. Peter), 49(2), 2000.
18. Marchionini, G.: *Information seeking in electronic environments*. Cambridge: Cambridge University Press, 1995.
19. Meadow, C.T., Boyce, B.R. & Kraft, D.H.: *Text information retrieval systems (2nd ed.)*. San Diego: Academic Press, 2000.
20. Myers, D.: *Professional Java XML programming with servlet and JSP*. Mumbai: Shrof Publishers, 2004.
21. Raymond, E. S.: *The cathedral and the bazaar: musings on Linux and open source by an accidental revolutionary* (Rev. ed). Cambridge: O'reilly and Associates Inc, 2001.
22. Tanenbaum, A.S.: *Computer networks (3rd ed.)*. New Delhi: Prentice-Hall (India), 2001.
23. Unicode Consortium: *The Unicode standard, version 4.1*. Reading: Addison Wesley, 2005.
24. Witten, I.H. & Bainbridge, D.: *How to build a digital library*. San Francisco: Morgan Kaufmann, 2003.
25. Witten, I.H., Moffat, A. & Bell, T.C.: *Managing gigabytes: compressing and indexing documents and images (2nd ed.)*. San Francisco: Morgan Kaufmann, 2003.
26. Wright, A.S.: *Professional PERL programming*. Mumbai: SPD/Apress Reprints, 2004.

**Paper II: Information Management and Knowledge Organisation
(Optional II)**

Structure

Full Marks: 100 Lecture Hours: 50 Hours

Objectives

- To introduce skills in managing changes in description and organisation of information resources, and access to information resources and services
 - To understand principles and practices in managing information institutions including quality management issues
 - To apply principles and practices of resources description and organisation in digital environment
 - To develop skills in subject analysis and proficiency in using standard tools and techniques of subject access system
 - To understand trends in information storage and retrieval
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Units

Lecture Hours

Unit I: Information Sources, Systems and Services

10

- Information sources including digital sources; Information sources Vs. Information resources
- Information institutions and information systems; Information Transfer Cycle; Open Knowledge Systems
- Information Analysis and Consolidation (IA+C) – methods and products
- Digital Information Systems (Including library networks, library consortia, institutional repositories, digital libraries, subject gateways, virtual reference systems, journal portals etc.)
- ICT-enabled information services and products (including Personal Information Environment (PIE))

Unit II: Management of Information Institutions and Systems

10

- Management principles and policies for information institutions and systems
- Systems Analysis & Design (SAD) and Management Information System (MIS)
- Quality management (including TQM) for information institutions and systems (Including LIBQUAL+, COUNTER, EQUINOX, SUSHI etc.) and Information marketing
- National and Global Information Systems
- Design and development of Information Systems – Factors, Methods and Evaluation

Unit III: Resource Description

10

- Objectives and principles of bibliographic description (including FRBR objectives, Ranganathan's principles, principles of Joint Steering Committee (JSC) and IME-ICC, principles of bibliographic relationships)
- Bibliographic data elements and models of bibliographic description (Including ISBDs, FRBR, GARR, FRAD, UKOLN's analytical model, XOBIS etc.)
- Bibliographic data standards
 - Exchange standards – ISO 2709/Z 39.2, MARC-XML, METS, MODS
 - Content designator / Framework standards – MARC 21, UNIMARC, CCF
 - Distributed cataloguing standards – Z 39.50, ZING, SRW
 - Interoperability and crosswalk
- Electronic resource description – generic and domain-specific metadata schemas, metadata encoding, metadata harvesting
- Trends of resource description and cataloguing

Unit IV: Resource Organisation

10

- Objectives, principles and postulates of document classification
- Changing dimensions of document classification – past, present and future
- Depth classification schedules – methods and products
- Online classification systems and classification of digital resources
- Ontology and Library classification

Unit V: Information Storage and Retrieval

10

- Subject analysis and representations –
 - Historical and theoretical foundations
 - Pre and post coordinate indexing
 - Evaluation of information retrieval systems and evaluation experiments/projects (including TREC)
- Automatic indexing systems – file Organisation processes, inverted file, text retrieval systems and software (Lucene, MGPP, HTDig, SWISH-e etc.), search strategies and techniques for CDROM databases and online systems (online databases, digital libraries, institutional repositories etc.), multimedia information retrieval
- Vocabulary control devices –
 - Traditional, digital and integrated (including standards of monolingual (ISO-2788 / BS 5723) and multilingual (ISO 5964 / BS 6723) thesauri
 - Design and development of online integrated thesauri (through open source software)
 - Taxonomy, thesaurus and ontology – comparative study
- Models of information retrieval, Information seeking behaviour and User interfaces
- Intelligent information retrieval (including natural language processing (NLP) systems and cross-language information retrieval)

Recommended Readings

Paper II: Information Management and Knowledge Organisation (Optional II)

1. Antoniou, G. & Harmelen, F.V.: *A semantic web primer*. Cambridge: MIT Press, 2004.
2. Atherton, P.: *Handbook for information systems and services*. Paris: Unesco, 1977.
3. Baeza-Yates, R. & Riberio-Neto, B.: *Modern information retrieval*. New York: ACM Press, 1999.
4. Bean, C.A. & Green, R. eds.: *Relationships in the organization of knowledge*. Dordrecht: Kluwer Academic Publishers, 2001.
5. Bhattacharya, G.: *Information sciences: a unified view through a system approach*. Calcutta: IASLIC, 1979.
6. Boll, John J.: *The future of AACR2*. *Cataloguing and Classification Quarterly*, 12(1), 3-34, 1990.
7. Borgman, C.L.: *From Gutenberg to global information infrastructure: access to information in the networked world*. Cambridge: MIT Press, 2000.
8. Broughten, V.: *Faceted classification as a basis for knowledge organization in a digital environment: the Bliss bibliographic classification as a model for vocabulary management and the creation of multidimensional knowledge structures*. *The New review of Hypermedia and multimedia*, 7(1), 67-102, 2001.
9. Buchanan, B.: *Theory of library classification*. London: Clive Bingley, 1979.
10. Chen, S.S.: *Digital libraries: the life cycle of information*. Columbia: BE Publishers, 1998.
11. Craven, T.C.: *String indexing*. Orlando: Academic Press, 1986.
12. Crawford, W. & Gorman, M.: *Future libraries: dreams, madness, and reality*. Chicago: American Library Association, 1995.
13. Crawford, W.: *Bibliographic displays in online catalogue*. London: Knowledge Industry, 1986.
14. *CyberDewey: the first well-organized Internet directory*. <available at <http://www.anthus.com/CyberDewey/CyberDewey.html>>
15. EQUINOX – *Library performance measurement and quality management system*. <available at <http://equinox.dcu.ie>>
16. Evans, G.E.: *Management techniques for libraries* (2nd ed.), 1993.
17. Flynn, R.R.: *An introduction to information science*. New York: Marcel Dekker, 1987.
18. Foskett, A.C.: *Subject approach to information* (5th ed.), 1996.
19. Fugmann, R.: *Subject analysis and indexing: theoretical foundation and practical advice*. Frankfurt: Verlag, 1983.
20. Gilchrist, A.: *From classification to knowledge organization*, 1997.
21. Grogan, D.J.: *Science and technology: an introduction to the literature* (4th ed.), 1983.
22. Heaney, M.: *Object-oriented cataloguing*. *Information Technology and Libraries*, 14(3), 135-153, 1995.
23. IFLA: *Functional requirements for bibliographic records: final report*. Munchen: K.G. Saur, 1998 <available at <http://www.ifla.org/VII/s13/frbr/frbr.pdf>>
24. Lazer, P.: *Information system design and management*, Sarada Ranganathan lectures, 15, 1982.
25. LibQUAL+ <available at <http://www.libqual.org>>
26. Machlup, F.: *Knowledge: its creation, distribution and economic significance VI: 1980, V2: 1982 & V3: 1984*.
27. McGarry, K.J.: *The changing context of information* (rev. ed.), 1993.
28. Milstead, J.L.: *Use of thesauri in the full-text environment* <available at <http://www.jelem.com/useof.htm>>
29. Needham, C.D.: *Organization of knowledge in libraries: introduction to library classification and cataloguing* (2nd ed.). London: Andre Deutsch, 1971.

30. Salton, G.: *Automatic text processing: the transformation, analysis and retrieval of information by computer*. Reading, MA: Addison-Wesley, 1989.
31. Seal, A. ed.: *Introducing the online catalogue*. London: The British Library, 1984.
32. Stuart, R.D. & Eastlick, J.T.: *Library management* (3rd ed.), 1988.
33. Svenonius, E.: *The conceptual foundations of descriptive cataloguing*. New York: Academic Press, 1989.
34. Svenonius, E.: *The intellectual foundation of information organization*. Cambridge: MIT Press, 2000.
35. Taylor, A.G.: *Authority files in online catalogues: an investigation of their value*. *Cataloguing and Classification Quarterly*, 9(3), 29-56, 1998.
36. Tenopir, C.: *Use and users of electronic library resources: an overview and analysis of recent research studies*. <available at <http://www.clir.org/pubs/reports/pub120/pub120.pdf>>
37. Van Rijsbergen, C.J.: *Information retrieval* (2nd ed.). London: Butterworth, 1979.