

Course Code: P24MLS8

Course Name- 2.3: INFORMATION PROCESSING AND RETRIEVAL SYSTEMS

Credit Distribution			Total Credits	Internal Marks	Semester Marks	Total Marks
L	T	P	L+T+P	C1	C2	C3
5	-	-	5	25	75	100

Objectives:

1. To know the basic and understand the concepts, importance of various Information Retrieval Systems and techniques
2. To familiarize with various indexing systems and different types of search strategies
3. To enable the students to familiarize with various Metadata Standards, Digital Object identifiers and Markup languages.

A. Course Outcome (CO)

After completion of the course, students will become familiar with the basic concepts in Library & Information Science.

COs	Course Outcome	Level	Level
CO 1	Illustrate the basic concepts and processes of information retrieval systems	Understand	K1
CO 2	Understand different indexing languages and tools of vocabulary control	Apply	K2
CO 3	Demonstrate the ability to derive subject headings through various indexing systems	Analyze	K3
CO 4	Acquaint with formulation of search strategies and IR Models and Demonstrate the ability to use citation databases,	Create	K6
CO 5	Explain and evaluate the information retrieval models	Evaluate	K5

B.Syllabus

Unit-I

Information Retrieval System–concepts, definition, characteristics, components and functions –Tools and Techniques, Measures of Performance and Evaluation Inverted Index, Boolean, Vector and Probabilistic Models, Structured Text Retrieval Models

Unit-II

Indexing systems – General Theory of Indexing languages. Indexing: Assigned Indexing, Derived Indexing, Pre coordination and Post coordination, Citation Indexing, Keyword Indexing, Evaluation of Indexing System, Thesaurus and vocabulary control; Web Indexing

Unit-III

Organization of digital resources – Metadata standards – Dublin Core, MARC21, ISO 2709, UNIMARC, CCF and DOI (Digital Object Identifier)

Unit-IV

Query formulation - search process; Search Techniques and strategies in Web of Science, Scopus, BLAISE, E.2, PUBMED. Web Information Retrieval – Characteristics, Search Engines - Optimization, Metadata, Recent Trends in IR – Models, User Interfaces (Semantic & Syntactic

Search)

Unit-V CURRENT CONTOURS (For Continuous Internal Assessment Only):

Evaluation of Information Retrieval Systems: Purpose – Criteria; Recall and Precision and steps in evaluation–Major Evaluation Studies – MEDLARS and SMART Retrieval. Software’s for information retrieval - Criteria for evaluation of IR systems.

Unit-VI

Recent Trends on structured Text Retrieval Models; Text Operations: document pre-processing (word stemming, stop words, thesauri), document clustering; Linguistic aspects; (**Ontology**)

Selected Readings:

1. Aitchison,J.(1970).The Thesauri facet: A Multipurpose Retrieval Language Tool. Journal of Documentation. 26;187-203
2. Aitchison,J. and Gilchrist,A .(1987). Thesaurus Construction: A Practical Manual. 2nded. London:ASLIB. Aldershot: Gower
3. Atchison, Jean&Gilchrist, Alan. Thesaurus construction: a practical manual. London: Aslib. 1972.
4. Austin,D. Precis, A manual of concept analysis and subject indexing.2nded. 1984.
5. B.C.Vickery. Techniques of information retrieval.London:Butterworths,1970.
6. Brown,A.G.(1982).Introduction to Subject Indexing.2nd ed. London: Clive Bingley.
7. Chakraborty,A.R. and Chakraborty, Bhubaneswar(1984), Indexing: Principles, Processes and Products. Calcutta: World Press.
8. Chowdhruy,GG. Introduction to Modern Information Retrieval. 2nded. London, Facet Publishing, 2003.
9. Chowdhury, G.G. (2004). Introduction to modern information retrieval. 2ndEd. London: Facet Publishing.
10. Hunter,EricJ.(1985).Computerized Cataloguing. London: Clive Bingley.
11. Lancaster, F. W. (1985). Vocabulary Control for Information Retrieval. 2nd ed. Arlington,Va.: Information Resources Press.
12. Lancaster, F.W. (2003). Indexing and abstracting in theory and practice. 3rd ed. London: Facet Publishing.
13. MARC21formats: background and principles. <http://lcweb.loc.gov/marc/96principi.html>
14. Rowley,Jennifer E.(1998).Abstracting and Indexing.2nded.London:CliveBingley.
15. Sarkhel,J.K.(2001).Information analysis in theory and practice .Kolkata: Classique Books.
16. Soergel, D. (1974). Indexing Language and Thesauri: Construction and Maintenance. Los Angeles, California Melville Publishing.

C. Mapping of COs with POs & PSOs

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