

**SCHOOL OF BUSINESS ADMINISTRATION
MANAGEMENT AND MARKETING DEPARTMENT
UNIVERSITY OF MISSISSIPPI
SPRING 2006**

COURSE NUMBER: MIS 695
COURSE TITLE: Research Seminar: Special Topics in Management Information Systems
INSTRUCTOR: Sumali Conlon; <http://faculty.bus.olemiss.edu/sconlon/>
Office: Holman 247, Phone: 915-5470; **e-mail:** sconlon@bus.olemiss.edu
Office Hours: 2:00-4:00 MW and by appointment

TEXTS :

- 1) Christopher D. Manning and Hinrich Schutze (1999). Foundations of Statistical Natural Language Processing, MIT Press; ISBN: 0262133601; 1st edition (June 18, 1999). —optional
- 2) R. Baeza-Yates, Berthier Ribeiro-Neto, and Ricardo Baeza-Yates (1999). Modern Information Retrieval, Addison-Wesley Pub Co; ISBN: 020139829X; 1st edition (May 1999).—optional
- 3) Journal and Proceedings articles (about 80 articles)

DESCRIPTION OF COURSE:

This course involves a study of E-commerce, Web Services, Service-Oriented Architecture, Semantic Web, knowledge management, information retrieval, natural language processing, text mining, and web mining. It covers indexing and searching, query operations, retrieval evaluation, text operations, searching the web, digital libraries, clustering, part-of-speech tagging, natural language interface, syntactic analysis, semantic analysis, information extraction, text summarization, and human-computer interactions.

PREREQUISITE: MIS 619 or consent of instructor

OBJECTIVES: The major objectives of this course are:

1. Understanding E-commerce, Web Services, Service-Oriented Architecture, and Semantic Web concepts.
2. Understanding Knowledge Management (KM) concepts.
3. Understanding Artificial Intelligence (AI) techniques.
4. Understanding Information Retrieval (IR) concepts.
5. Understanding Natural Language Processing (NLP) techniques
6. Applying these techniques to texts (WWW in particular)

CLASS MEETINGS: 6:00-8:30 Thursday (Holman 132)

TEACHING METHOD:

For each topic, there will be a comprehensive lecture. Students will read text books and research papers in each area, present, and discuss them. There will be some programming work on some topics.

Topics	Hours
Part I. E-commerce, Web Services, Service-Oriented Architecture and Semantic Web concepts.	5
Part I. Knowledge Management	2
Part II. Basic Concepts of Artificial Intelligent	5
Knowledge representations, knowledge bases, machine learning neural networks, genetic algorithms, intelligent agents	
Part III. Information Retrieval	3
Classic Information retrieval Boolean Model, Vector Space Model, Probabilistic Model	
Retrieval Evaluation Retrieval Performance Evaluation (recall and precision)	
Query Operations Query Expansion (using relevance feedback, local clustering, local content analysis, similarity thesaurus, statistical thesaurus)	
Markup Languages (SGML, HTML, XML) Indexing and searching (Inverted files, sequential searching, pattern matching) Latent Semantic Indexing	
Part IV. Natural Language Processing	12
Linguistics Essentials (Parts of speech, phrase structure, corpus-based work) Words (Collocations, statistic inference: n-gram model, statistical estimators) Lexical Acquisition Grammar (Markov Models, Part-of-speech tagging, context free grammars) Clustering Text categorization Text summarization Information extraction WordNet – Lexical data base Natural Language Interface	
Part V. Web Mining	5
Search engines & others	
Part VI. Others	
Using the above techniques in business texts, etc.	3

POLICY

1. CHEATING:

1. Minimum penalty for cheating on out of class assignments is zero credit for that assignment.
2. Minimum penalty for cheating on exams is an F in the course.

2. GRADING SCALE:

- A 90% - 100%
- B 80% - 89%
- C 70% - 79%
- D 60% - 69%

Option 1		Option 2	
Midterm	20%	Research paper	50%
Final	20%	Class participation & discussions	50%
Research paper	30%		
Class participation & discussions	30%		

TOPICS COVERED: The following is a description of the topics to be covered and the number of hours that will be spent on each topic:

Reading lists -- will be available later