

The University of Michigan - Dearborn
Department of Computer and Information Science

CIS 590 Web Information Systems Fall 2004

Instructor:	Dr. Qiang Zhu	Office hours:	Mon. 12:30 - 1:30pm
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This course provides an in-depth examination of advances in Web information management, retrieval and applications. Topics covered include: Web interfaces to database systems, semistructured data management, XML standards, XML database design, Web query languages, Web query systems, Web information integration, Web database system architectures, semantic Web, Web services, ontologies, and Web mining. (3 credit hours)

Your grade in this course will be determined by your scores on a midterm, a cumulative final, and several assignments/projects. The midterm will count for 30%, the final exam will count for 40%, and the assignments/projects will count for 30%. Late work will be penalized (5% each working day, weekends count as 5%), as will evidence of cheating in any form.

Prerequisite: CIS 556 or equivalent

Class schedule: M. 6:10 - 9:00pm in Room 1410 PEC

Texts:

1. *Designing XML Databases*, M. Graves, Prentice Hall PTR, 2002
2. *CIS590 Course Pack*, Fall 2004
3. *CIS590 Lecture Notes*, Fall 2004

References:

1. *Web Applications: Concepts & Real World Design*, C. Knuckles and D. Yuen, John Wiley & Sons, Inc., 2005
2. *Web Data Management: A Warehouse Approach*, S. S. Bhowmick, et al., Springer-Verlag, Inc., 2004
3. *XML Databases and The Semantic Web*, B. Thuraisingham, CRC Press LLC, 2002
4. *Mining the Web: Discovering Knowledge from Hypertext Data*, S. Chakrabarti, Morgan Kaufmann Publishers, 2003

Tentative Contents:

1. Overview of Web database technologies
 - Web query systems, Web information integration, Web data restructuring, semistructured data, XML databases, Web mining, Web applications
2. Web interfaces to database systems

- CGI approach, hypertext preprocessing approach, etc
- 3. XML Basics
 - concepts, DTD, XML Schema, XML APIs, XSL, etc
- 4. XML database design
 - conceptual modeling, logic design, physical design, data models
- 5. XML query languages
 - XPath, XQuery, other languages
- 6. Web database architectures
 - Web data access approaches, three-tier architecture, relational data server, XML data server, hybrid relational/XML server
- 7. Semantic Web and ontologies
 - semantic Web, Web services, ontologies
- 8. Web mining
 - mining Web data, mining Web usage patterns

Midterm: Monday, November 1, in class (tentative)

Final Exam: Monday, December 20, 7:30 - 10:30pm