Course Information Sheet
CSCI 4350
Web Information Systems

Brief Course Description (50-words or less)	Provides intermediate to advanced understanding of the use of Internet, World Wide Web, and network computing (including Java) technologies for management (search, access, integration, presentation) of multimedia information. Topics discussed include key techniques, tools and technologies for creating such systems, developing novel applications, and their impact on business.
Extended Course Description / Comments Use this section to put additional information that's relevant to whom this course is targeting	
Pre-Requisites and/or Co-Requisites	CSCI 2720 Data Structures
Approved Textbooks (If more than one, course text used during a semester is at the discretion of the instructor)	Author(s): Amit Sheth and Krishnaprasad Thirunarayan Title: Semantics Empowered Web 3.0: Managing Enterprise, Social, Sensor, and Cloud-based Data and Services for Advanced Applications (Synthesis Lectures on Data Management) Edition: 1st ISBN-13: 978-1608457168

Specific Learning Outcomes (Performance Indicators)

These are a (non-exhaustive) list of specific, measurable outcomes, as they relate to the course & program objectives.

These learning outcomes should avoid using ambiguous language such as "understand" or "familiar".

Performance indicators must include an action verb (indentifying the depth to which students should demonstrate performance), and the content referent that is the focus of the instruction (from ABET)

Target number 5 - 10

This course presents a survey of topics in web information systems most relevant to students studying computer science. At the end of the semester, all students will be able to do the following:

1. Design and implement complex web information systems that will fuse information from multiple sources.
2. Use various meta-data standards for information extraction and representation on the web.
3. Build semantic queries on the linked data.
4. Evaluate different web mining techniques on the social media.
5. Evaluate effectiveness of various search and querying techniques on the web.
6. Design and implement a CrowdSourcing application.
7. Define various approaches for privacy, personalization and abuse detection on the web.
8. Analyze new trends and open research questions for domain specific information systems.

ABET Learning Outcomes

A. Graduates of the program will have an ability to: Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
B. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
C. Communicate effectively in a variety of professional contexts.
D. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
E. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
F. Apply computer science theory and software development fundamentals to produce computing-based solutions.

NOTE: In the construction of the student learning outcomes for this course, the instructors interpreted "computing requirements" in (B) as the functional requirements for a software solution and not as specific hardware requirements for the target platform; likewise, the phrase "[a]pply computer science theory" in (F) was interpreted as using computer science principles.

Relationship Between Student Outcomes and Learning Outcomes

		ABET Learning Outcomes					
		A	B	C	D	E	F
Specific Learning Outcomes	1	●	●			●	
	2		●		●	●	
	3		●				
	4	●	●		●		●
	5	●	●		●		
	6		●	●	●	●	●
	7		●		●		
	8		●				●

Major Topics Covered
(Approximate Course Hours)

3 credit hours = 37.5 contact hours
4 credit hours = 50 contact hours

Note: Exams count as a major topic covered

Introduction (1 hour)
Information Fusion (2 hours)
Metadata Standards (2 hours)
Information Extraction and Matching (4 hours)
Semantic Querying and Retrieval (4 hours)
Linked Open Data (2 hours)
Question Answering (2 hours)
Analysis of Social Networks (3 hours)
Sentiment and Opinion Mining (4 hours)
NLP and Data on the Web (2 hours)
Web Search and Ranking (2 hours)
Multimedia Data on the Web (3 hours)
CrowdSourcing: Human Computation (4 hours)
CitizenSourcing and Citizen Journalism (2 hours)

Privacy and Personalization (3 hours)
Understanding and Computing Abuse (2 hours)
Domain Specific Web ISs: History, Political Science,
Medicine, Smart Cities etc. (3.5 hours)
Exams (4.5-hours)

Assessment Plan for this Course

Each time this course is offered, the class is initially informed of the Course Outcomes listed in this document, and they are included in the syllabus. At the end of the semester, an anonymous survey is administered to the class where each student is asked to rate how well the outcome was achieved. The choices provided use a 5-point Likert scale containing the following options: Strongly agree, Agree, Neither agree or disagree, disagree, and strongly disagree. The results of the anonymous survey are tabulated and results returned to the instructor of the course.

The course instructor takes the results of the survey, combined with sample student responses to homework and final exam questions corresponding to course outcomes, and reports these results to the ABET committee. If necessary, the instructor also writes a recommendation to the ABET committee for better achieving the course outcomes the next time the course is offered.

How Data is Used to Assess Program Outcomes

Each course Learning Outcome, listed above, directly supports one or more of the Program Outcomes, as is listed in "Relationships between Learning Outcomes and Program Outcomes". For CSCI 4350, Program Outcomes (b), (c), (i) and (j) are predominantly supported.

Course Master
Dr. I. Budak Arpinar

Course History
Last modified on 2/19/2024 by Dr. I. Budak Arpinar.