



0768

Curriculum Proposal

Please type or select the requested information. Print completed forms, add appropriate paper attachments, and route through MSU's curricular process for recommendations and decisions.

		(Check all that apply):		Proposal #	129
College:	Science, Engineering and Technology	<input checked="" type="checkbox"/>	Undergraduate	Effective Date of Change:	
Department:	Computer and Information Sciences	<input checked="" type="checkbox"/>	Graduate	Academic Year	16-17
Program:	Computer Information science	CIP # 11.0701 00		(For Office Use Only)	
Type of Change	COURSE PROPOSALS			Course Designator and Number	Number of Credits
Proposed:	New Course				
Title Current:					
Title Proposed:	Web Applications and User Interface Design			IT 483 / IT 583	4
24-Char. Abbrev:	Web Applic & User Interf			(if applicable)	

Include a course or program description for the Bulletin (30-40 words maximum for courses, 100 for programs):
 HTTP Protocol; Web-markup languages; Client-side, Server-side programming; Web services; Web servers; Emerging technologies; Security; Standards & Bodies; Web interface design techniques; User-centered design; Visual development environments and development tools; Interface design effectiveness.
 Pre: IT 340 or ISYS 340, IT 380 or ISYS 380
 Fall, Spring

Rationale or Justification for change:
 The CIS major is being redesigned and name changed to Information Technology (IT). This course is critical to ABET accreditation for Information Technology

*****For General Education or Cultural Diversity Courses Only*****

General Education Course:		Cultural Diversity Course:	
GE Category #	GE Category Name (Maximum of 3 Categories)	(Please check one.)	
N/A		<input type="checkbox"/> Core (At least 75% devoted to topics of race, gender, sexual orientation, age, class, and disabilities as they occur in United States Society.)	
N/A		<input type="checkbox"/> Related (At least 25% devoted to the above topics or to a global perspective on topics related to African American, Asian, Hispanic, and Native American inhabitants of the United States.)	
N/A			
<p>? For Writing Intensive Courses, attach a description of the kind and quantity of writing. ? For Upper Division Courses, include a description of the respects in which it is broad and general rather than narrow and specific, and so suitable as GE.</p> <p>Attach paper copies of the following: a. Syllabus or course outline. b. Course's student learning outcomes associated with each GE competency or CD designation. c. List of strategies to be used to assess students' achievement of each GE competency or CD designation.</p>			

*****For New Courses*****

(Check all that apply):	Instructional Type:	Lecture	Course will be offered:
<input type="checkbox"/> Course is an elective.	Grading Format:	<input checked="" type="checkbox"/> Grade <input type="checkbox"/> P/N	<input checked="" type="checkbox"/> Fall Semester
<input checked="" type="checkbox"/> Course is required for program		Information Technology (IT)	<input checked="" type="checkbox"/> Spring Semester
<input checked="" type="checkbox"/> Pre- or Co-requisites:		IT 214 or ISYS 215	<input type="checkbox"/> Summer Session
<input checked="" type="checkbox"/> Other courses are being changed or eliminated. (Explain.)	Modified COMS 463. COMS 463 is dropped		
<input type="checkbox"/> Course content or title is similar to courses in other departments. (Attach copy of letter of agreement with other program(s) contacted. Indicate the nature of the discussions and/or resolution of differences or potential conflicts.)			
Attach paper copies of the following: a. Syllabus or course outline. b. Course's student learning outcomes. c. A list of resources required to offer and support this course. d. A description of how teaching this course will affect department staffing. e. If 400/500 level course, an explanation of added expectations of graduate students.			



Minnesota State University, Mankato
Curriculum Proposal

Signature Page

Department

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

Daniel Hagedorn 11/9/06
 Department Chair Date

Comments:

College Curriculum Committee

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

Karen C. Chon 11/2/06
 Committee Chair Date

Comments:

College Dean

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

[Signature] 11/6/06
 Dean Date

Comments:

General Education Subcommittee

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

 General Education Subcommittee Chair Date

Comments:

Undergraduate Curriculum and Academic Policy Committee

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

[Signature] 1-31-07
 UCAP Faculty Chair Date

Comments:

Faculty Association Graduate Committee

Recommended
 Not Recommended

 Faculty Association Graduate Chair Date

Comments:

Graduate Dean

Recommended
 Not Recommended

 Graduate Dean Date

Comments:

Academic Affairs Council

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

Daniel Hennings 2/9/07
 Assistant Vice President Date

Comments:

Senior Vice President and Vice President for Academic Affairs

Approved (Category/ies _____)
 Not Approved (Category/ies _____)

[Signature] 2/13/07
 Sr. Vice President / Vice Pres. Academic Affairs Date

Comments:

IT 483/583 (4) Web Applications and User Interface Design

a. SYLLABUS

Textbook:

Beginning ASP.NET 1.1 with VB.NET 2003, Chris Ullman et. al, Wrox, 2004

Introduction to ASP.NET , 2nd Edition, Kathleen Kalata, Thompson Course Technology

JavaScript, Gosselin, Third Edition, Course Technology, 2004, ISBN: 0619215216

Designing the User Interface: Strategies for Effective Human-Computer Interaction, by Ben Shneiderman, Third Edition, Addison-Wesley, July 1997

Prerequisites:

IT 340 or ISYS 340, IT380 or ISYS 340

Course Objectives:

- Structure of the World Wide Web and HTTP protocol.
- Presentation technologies, such as, Cascading Style Sheets and DHTML.
- Client-side vs. Server-side programming.
- Emerging Web technologies, such as XML, SOAP, WSDL, UDDI, Java, C#, EJB, .NET, etc.
- Use specialized Web Markup languages, such as SVG, SMIL, RSS, etc.
- Web standards and standard bodies including the World Wide Web Consortium (W3C).
- Web development using Client-side programming with JavaScript, Java Applets, Flash, and other Web GUI technologies.
- Construct Web server programs with Server-side programming using/working with Generic HTTP, CGI techniques, Open Source as well as Proprietary languages and packages such as Flash, Active X, RealMedia, and QuickTime.
- Design, construct, test and evaluate web services using Open Source languages and packages, proprietary languages and packages and enterprise web development technology.
- Design, construct, test and evaluate distributed web applications.
- Web design process: User modeling and user-driven design, Web Design Patterns, Information organization, Usability, N-Tier architectures
- Listservs, discussion boards, wikis, blogs, and chat-rooms – various ethical issues associated with the web, including the digital divide, issues concerning race and gender, freedom of speech, privacy and copy and digital content rights.
- Web Vulnerabilities –cookies, web beacons, phishing, spyware, viruses and protection.
- Web server security, denial-of-service attacks, transaction security - certificates and secure connections
- Relationship between the cognitive principles and their application to interfaces and products.
- Characteristics of human-centered design methods.
- Emerging alternative I/O devices for User Interfacing; mobile and wearable devices.
- Developing user interface on web pages not encountered in developing a GUI for a standalone application.

- Describe several affordances of a web environment that can enhance the usability of a web-based application.
- User interfaces for domain specific applications
- Usability of an application by performing a heuristic evaluation.
- Major usability guidelines and standards.
- Users' characteristics (i.e., age, education, cultural differences, etc.) requiring adaptation of a user interface to increase effectiveness.
- Options (techniques) for developing prototypes of user interfaces.
- Access via biometrics

Course Coverage:

User Interface Design 40%
 Web Applications Design 60%

Course Contents:

Week	Topics
1	Introduction, Structure of WWW and http protocol Web standards and standard bodies, World Wide Web Consortium (W3C).
2	Emerging Web Technologies: XML, SOAP, WSDL, UDDI, Java, C#, EJB, .NET, SVG, SMIL, RSS
3	Server Side Scripting with ASP, .NET
4	Server Side Scripting with back end database
5	Presentation Techniques - Cascading Style Sheets and DHTML
6	Client side programming, JavaScript
7	Emerging Proprietary languages and packages
8	Java Applets, Flash, and other Web GUI technologies.
9	CGI techniques, Active X, RealMedia, and QuickTime.
10	Web Vulnerabilities –cookies, web beacons, phishing, spyware, viruses and protection. Web server security, denial-of-service attacks, transaction security - certificates and secure connections
11	Cognitive principles and their application to interfaces and products.
12	Characteristics of human-centered design methods. users' characteristics to increase effectiveness.
13	Application Design and stages of a software development lifecycle.
14	Emerging alternative I/O devices for User Interfacing; mobile and wearable devices
15	Usability guidelines and standards.

Catalog Description:

HTTP Protocol; Presentation abstractions; Web-markup languages; Client-side programming; Server-side programming; Web services; Web servers; Emerging technologies; Security; Standards & Standard Bodies; Techniques for web interface design; User-centered design; Visual development environments and development tools; Measure the effectiveness of interface design.

Grading:

Quizzes	15%
Project	35%
Presentations	10%
Midterm	20%
Final	20%

b. LEARNING OUTCOMES

- Create and validate HTML/XHTML and XML documents.
- Contrast data entry and validation techniques in Client-side vs. Server-side programming.
- Discuss and contrast Client-side with Server-side security issues.
- Describe the use of server-side backend databases in web sites and web applications.
- List and discuss the function of existing and emerging Web technologies, such as XML, SOAP, WSDL, UDDI, Java, C#, EJB, .NET, etc.
- Apply and integrate XML syntax to transform documents between formats.
- Understand Web Standards in terms of specifications, guidelines, software, and tools.
- Apply presentation technologies to author websites, such as Cascading Style Sheets, XSLT-FO, DHTML, etc.
- Use specialized Web Markup languages, such as SVG, SMIL, RSS, etc.
- Implement Web solutions that comply with Web standards and standard bodies including specifications, guidelines, software, and tools.
- Use cascading style sheets to create style standards for a web site.
- Use data persistence via cookies in maintaining states.
- Understand issues and implementation of server-side security.
- Discuss issues in maintaining backend databases.
- Describe characteristics of users of a web site that affect design. And enhance usability of a web site.
- Describe the relationship between the cognitive principles and their application to interfaces and products.
- Understand characteristics of human-centered design methods.
- Emerging alternative I/O devices for User Interfacing; mobile and wearable devices.
- Describe several constraints on developing a user interface on a web page not encountered in developing a GUI for a standalone application.
- Describe several affordances of a web environment that can enhance the usability of a web-based application.
- Develop user interfaces for domain specific applications
- Measure the usability of an application by performing a heuristic evaluation.
- Describe the major usability guidelines and standards.
- Describe ways in which users' characteristics (i.e., age, education, cultural differences, etc.) require adaptation of a user interface to increase effectiveness.
- Enumerate the options (techniques) for developing prototypes of user interfaces.
- Measure the effectiveness of a design of an application or product during different stages of a software development lifecycle.

c. RESOURCES REQUIRED TO OFFER AND SUPPORT THIS COURSE

Resources currently in place within the department and the University Library will support this new course. No new resources are required.

d. IMPACT ON STAFFING IN THE DEPARTMENT

There is no impact on department staffing.

e. DIFFERENT ASPECT IN 500 LEVEL

Graduate students must do independent research in a topic of current interest. Students are required to write a research paper about their topic and present their findings to the class.