GEORGE MASON UNIVERSITY

COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT

INSTRUCTIONAL TECHNOLOGY

EDIT 752

Design and Production of Multimedia/Hypermedia Learning Environments

Spring 2010

Mondays 4:30 – 7:10 pm

Fairfax Campus

PROFESSOR(S):

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COURSE DESCRIPTION

1. **Prerequisites –** EDIT 730 or permission of instructor

2. **Course description from the University Catalog:** Students design and produce multimedia/hypermedia applications based on current theory and research in instructional design and cognitive science. Examines user needs, information models, structure, and media selection and uses to inform design and production of final project.

NATURE OF COURSE DELIVERY

This course will provide students with face-to-face and online learning opportunities to apply

principles of instructional design, design research, user research, usability and evaluation and revision techniques to a real world learning technology design project. Students will work intensively in a team-based setting to collaboratively and thoroughly design/re-design, produce, collect, evaluate, and analyze data related to the design and/or implementation of a real-world technology solution prototype geared toward a specific instructional or performance problem. The outcome of the course will be a viable and implemented user research plan that allows for several rounds of applied data collection, analysis and revision of a technology-based prototype project.

STUDENT OUTCOMES

This course is designed to enable students to:

1. understand the process of instructional design and development as applied to a real-world project;
2. apply instructional design, learning theories and interdisciplinary design principles to technology prototype development;
3. apply product development, evaluation, research and design research methodologies to instructional design and development
4. collect and analyze user data related to iterative instructional design and development
5. reflect on individual growth as an instructional designer in blog
6. contribute positively to the team's mission and goals and support of individual members and team members' professional growth and development
7. document individual's contributions to team's mission and goals
8. contribute to project management and accomplishment of goals
9. write research-project management plan
10. conduct usability or similar evaluation of technology-based prototype
11. conduct several research and/or evaluation methodologies (interviews, focus groups, log, day-in-the-life files, etc.)
12. analyze data from several evaluation or research cycles and apply to iterative design, development and revision of technology-based prototype
13. professionally present technology-based prototype

PROFESSIONAL STANDARDS:

This course adheres to the following Instructional Technology Program Goals and Standards for Programs in Educational Communications and Instructional Technologies established by the Association of Educational Communication and Technologies (AECT) under the National Council for the Accreditation of Teacher Education (NCATE).

Standard 1 – Design

1.1.2.a Demonstrate in-depth synthesis and evaluation of the theoretical constructs and research methodologies related to instructional design as applied in multiple contexts.

1.1.3.b Utilize the research, theoretical, and practitioner foundations of the field in the development of instructional materials.

1.1.4.a Conduct basic and applied research related to technology integration and implementation.

1.1.5.c Articulate the relationship within the discipline among theory, research, and practice as well as the interrelationships among people, processes, and devices.

1.3.a Identify multiple instructional strategy models and demonstrate appropriate contextualized application within practice and field experiences.

REQUIRED TEXTS:

1. Kuniavsky, M. (2003) Observing the User Experience. San Francisco: Morgan Kaufmann Publishers (same as EDIT730)
2. Tullis, T. & Albert, B. (2008). Measuring the User Experience. Burlington, MA: Morgan Kaufmann.

COURSE REQUIREMENTS, PERFORMANCE-BASED ASSESSMENT, AND EVALUATION CRITERIA

1. **Requirements**

1. Design+Research Blog - Students will read class readings to include the text and a supplemental resource or article that reflect current literature and research related to user-centered design, usability, design research and evaluation. Each student will post 1 major contribution of thoughts and reflections of the integration of the relevant weekly reading assignment (based on weekly readings at

sign up) and at least one other related article/resource on topics related to design research, user research or usability. These contributions will be sent to the instructor via email for review and posting. Students will also be required to submit at least two minor commentaries on others students' major contributions. The major contribution for each student will consist of that student taking the lead on a related topic to our study and thoughtfully contributing and provoking interest among the class on:

- A major contribution of a topic related to thoughtful integration of current readings with associated article/resource (but not repetitive of it)

- Examples of notable design, design research, user research trends, usability testing and implementation

- Review and brief discussion of relevant articles, research, websites and personal contacts (if applicable), etc related to other students' contributions.

- Posting of any relevant websites on course Delicious site as well as in Design Research blog.

2. User Research-Project Management Plan – Each team member will contribute to the drafting and finalization of a user-research project management plan for the semester that includes further development of the prototype, selection of user research methods that will be implemented in at least two formative evaluation cycles and overall, related, logistical planning and procedures that will enhance the prototype design through data-driven design-evaluation cycles. Each student will work with his or her team to successfully break down tasks as well as construct, negotiate and implement a project management plan across the semester that will be carried out by all team members who each will assume lead on one deliverable (see number 3 below) that will be posted to the course Wiki early in the Spring semester.

3. Project Management by Lead Group Member – Collectively and individually, students will contribute on a rotating basis to the management of the project prototype. This may include assuming responsibilities for a specific task or deliverables determined agreed to by the group. Group members who are not lead are expected to contribute to the prototype designating their contribution, but the lead rotating group member's job is to assist the group in establishing schedules, writing, creating meeting agendas, setting up client meetings, gathering and analyzing data, design documents or any other overall contribution to the logistics of a positive project user research outcome. At the end of the semester, students will be expected to report their project management lead deliverable and how they contributed to each deliverable.

4. Production of Prototype - Collectively and individually, students will continue to contribute to producing quality instructional design for the established project prototype based on data-driven design decision-making. All changes of the prototype will be reported and demonstrated on the course Wiki with designation of lead group member and contributions of other group members.

5. Data Collection and Analysis – Collectively and individually, each student will contribute to conducting user research and appropriate revisions to the prototype. The deliverables will include: a user research/project management plan that may incorporate selected research methods such as contextual inquiry, enhanced competitive-market analysis, task analysis, card sorting, focus groups, usability tests, surveys, diaries, log files, competitive research, etc. There will be two rounds of data collection and analysis methods implemented with resulting, identified logical revisions to the prototype. Each round will be submitted on the course Wiki with designation of lead group member and contributions of other group members.

6. User Research Presentation - Each group will present their user research, their data collection, analyses and prototype revisions from rounds 1 and 2 for the class and clients, if available. Each report will consist of an overview of two rounds of evaluation, results, analysis and associated revisions (screen shots) to prototype and highlight the group's process/accomplishments in user research throughout the semester.

B. Performance-Based Assessments - This course includes multiple performance-based assessments: project management, production of prototype, user research data collection and analysis, user research presentation to classmates and client.

C. Criteria for evaluation - Assessment of each performance assessment is guided by the rubric below. Given the nature of the assignments and the authentic projects involved in this course, the assessment process in this course will be based upon group process model in evaluating individual performance. For each deliverable/assignment groups will provide detail on the roles and responsibilities that the individual has assumed on each of the assignments. Students should indicate which assignment that they were the lead on and detail the contributions they have made to each of the assignments in their individual portfolios. In addition, students will evaluate their own and group members' overall contributions to the design and development of the instructional module at the mid-point and end of the semester. This evaluation form will be completed using the rubric below to provide additional data on the performance on the identified criteria, however, the instructor will determine the grades.

The following rubric will be used to evaluate individual performance as part of the project group. Students use this framework to assess their own and their peers' performance. The instructor(s) also evaluate students based on this rubric.

	Exceeds Expectations	Meets Expectations	Below Expectations
	(E = Exceeds Expectations) A level work	(M = Meets Expectations) B level work	(B = Below Expectations) C level work
Course Readings/Blog contributions	Significant evidence and outstanding contributions to course that demonstrates that student read, synthesized and applied concepts from readings as well as integrated outside resources on user research and design research.	Evidence that student read, synthesized and applied concepts from readings as well as integrated outside resources on user research and design research.	Little or no evidence that student read, synthesized and applied concepts from readings or outside resources on user research and design research.
User Research-Project Management Plan	Significant contribution to the team generated, user research-project management plan. Making all efforts to follow plan, discuss any changes if necessary with	Thoughtful contribution to the team generated, user research-project management plan. Making efforts to follow plan, discuss any changes if necessary with all members,	Little or no contribution to the team generated, user research-project management plan. Little evidence of individual effort to follow plan, discuss any changes if necessary with all

	all members, and successfully work with and negotiate with team members implementing plan across the semester.	and successfully work with and negotiate with team members implementing plan across the semester.	members, and successfully work with and negotiate with team members implementing plan across the semester.
Project Management Lead Group Member and Contributions to Group Project Process (self, peer, instructor)	Demonstrated, organized and effective management of one necessary deliverable or task relevant to user research documented on wiki. Full participation in group meetings and communication, showed exceptional effort on individual tasks, exceeded individual contribution and was instrumental in leading group forward, respectfully acknowledged and integrated all members' skills in project development process	Demonstrated management of one necessary deliverable or task, relevant to user research documented on Wiki. Participated in group meetings and communication efforts, delivered on individual responsibilities, made valuable individual contributions to group process, contributed to progression of project.	Little or no demonstrated management of one necessary deliverable or task relevant to user research documented on wiki. Noted absences at group meetings or communication, late or missing items under individual responsibility, hindered progress of project, did not adhere to group norms and did not treat members ideas and opinions with respect.
Production of Prototype	Significant progression of production of prototype evident with significant revisions that result from data-driven user research. Group member lead and participants documented contributions on Wiki.	Progression of production of prototype evident with revisions that result from data-driven user research. Group member lead and participants documented contributions on Wiki..	Little or no progression of production of prototype evident with revisions that result from data-driven user research. Group member lead and participants documented contributions on Wiki.
Data Collection and Analyses	Each group member significantly contributed to drafting user research plan, both rounds of data collection, analysis and preparation for revision of prototype. Group lead arranged for contacts but provided evidence on wiki that all members contribute to data collection and analysis.	Each group member contributed to drafting user research plan, both rounds of data collection, analysis and preparation for revision of prototype. Group lead arranged for contacts but provided evidence on wiki that all members contribute to data collection and analysis.	A group member demonstrates little or no contribution to drafting user research plan, both rounds of data collection, analysis and preparation for revision of prototype. Group lead does not arrange for contacts and does not provide evidence on wiki that all members contribute to data collection and analysis.
User Research	Highly professional, well-coordinated presentation	Professional, coordinated presentation of user research	Non-professional, not well-coordinated

Report	of user research rounds and resulting prototype revisions.	rounds and resulting prototype revisions.	presentation of user research rounds and resulting prototype revisions.

D. Grading Scale

Requirements	Percentage
Course Readings-Blog	10%
User Research-Project Management Plan	10%
Project management effort	10%
Production of Prototype	20%
Data Collection and Analysis	40%
User Research Presentation	10%

COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT STATEMENT OF EXPECTATIONS:

All students must abide by the following:

Students must follow the guidelines of the University Honor Code. See http://www.gmu.edu/catalog/apolicies/#TOC_H12 for the full honor code.

Students must agree to abide by the university policy for Responsible Use of Computing. See http://mail.gmu.edu and click on Responsible Use of Computing at the bottom of the screen.

Students with disabilities who seek accommodations in a course must be registered with the GMU Disability Resource Center (DRC) and inform the instructor, in writing, at the beginning of the semester. See www.gmu.edu/student/drc or call 703-993-2474 to access the DRC.

UNIVERSITY REQUIREMENTS:

ACADEMIC INTEGRITY
GMU is an Honor Code university; please see the University Catalog for a full

description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification.

GMU EMAIL ACCOUNTS
Students must activate their GMU email accounts to receive important University information, including messages related to this class.

OFFICE OF DISABILITY SERVICES
If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Services (ODS) at 993-2474. All academic accommodations must be arranged through the ODS. http://ods.gmu.edu

OTHER USEFUL CAMPUS RESOURCES:

WRITING CENTER: A114 Robinson Hall; (703) 993-1200; http://writingcenter.gmu.edu

UNIVERSITY LIBRARIES "Ask a Librarian"
http://library.gmu.edu/mudge/IM/IMRef.html

COUNSELING AND PSYCHOLOGICAL SERVICES (CAPS): (703) 993-2380;
http://caps.gmu.edu

UNIVERSITY POLICIES
The University Catalog, http://catalog.gmu.edu, is the central resource for university policies affecting student, faculty, and staff conduct in university affairs

PROPOSED CLASS SCHEDULE

WEEK	IN CLASS ACTIVITIES	OUT OF CLASS ACTIVITIES
1 Jan 18 (F to F)	Proctored by Dr. Williams van Rooij Overview of Syllabus: Schedule and Requirements Sign up for week of blog question/discussion lead Meet as groups, identify issues and questions, draft production prototype goals	- Read Kuniavsky: Chapter 1-3 - As a group, re-examine prototype, feedback from last semester and draft revision/production goals for prototype for the next month and post on wiki - begin to think about and plan for connecting with target audience members related to user research cycles
2 Jan 25 (online)	Review posted overview slides and articles on design research Comment on Design Research blog on thoughts and impressions of this new research approach in instructional technology	- Read Kuniavsky: Chapter 4-5 - Read Bannan (2009) Intro to design research and related articles in Plomp & Nieveen PDF "An Introduction to Educational Design Research" posted on course Wiki. - Discuss enhancing and fleshing out prototype based on last year's -- Begin thinking about user research/project management plan - REVIEW examples of user research/project management plans from last year on course Wiki site
3 Feb 1 (F to F)	Overview discussion of iterative development and potential applied user research methods The User Experience	- Read Kuniavsky: Chapter 6-8 - Review user tools and techniques - Establish user research goals

	User Tools and Techniques User Research/Project Management Plan	- Continue work on enhancing and fleshing out prototype based on last semester feedback - Work on user research-project management plan draft - Brainstorm and begin to draft user research goals, priorities and questions - Determine accessible target audience and begin to recruit audience members, bring ideas and progress to next class
4 Feb 8 (online)	User Research Plan Recruiting and Interviewing Overview Contextual Inquiry, Task Analysis Work on production effort /research-project management	- Read Kuniavsky: Chapter 8-9 - Continue work on revisions to production prototype - Continue work on user research-project management plan - Intersect initial project management plan with user research goals, questions, and methods - Identify and recruit target audience members
5 Feb 15 (F to F)	Focus groups Extracting trends and coding Review web resources on conducting focus groups Begin discussion of Usability testing and methods Participatory Design Confirm selected user research methods to inform prototype development-revision	- Read Kuniavsky: Chapter 10 - Read Tullis/Albert: Chapters 1-3 - Integrate usability testing into user research/project management plan - Continue work on prototype to get in shape for further formative evaluation testing

6 Feb 22 (online)	Review Usability Testing resources and refine broad plan Kirkpatrick, other formative evaluation frameworks	- Read Kuniavsky: Chapter 11 - Read Tullis/Arnold: Chapter 4-5
7 Mar 1 (F to F)	**User Research-Project Management Plan DUE** Usability testing and metrics Surveys Round 1: Data Collection begins	- Read Kuniavsky: Chapter 12 - Read Tullis/Arnold: Chapter 5-6 - Implement User Research Plan - Recruit and interview - Begin data collection and analysis - Report results and related prototype revisions on Wiki site - Cycle of development/revision of prototype based on analyzed results begins
8 Mar 8	***SPRING BREAK***	***SPRING BREAK***
9 Mar 15 (F to F)	Round 1: Data Analysis Diaries, Advisory Boards, Beta-testing Ethnographic design research Groupwork – analysis, work on report	- Read Kuniavsky: Chapter 13 - Read Tullis/Arnold: Chapter 6, Chapter 8 and Chapter 9 - Data Analysis -Development-Revision of prototype based on results

10 Mar 22 (online)	Diaries, Advisory boards, Commentary Logfiles, and Clickstream data Round 1: Finalize and Flesh out Report	- Read Kuniavsky: Chapter 14 - Round 1: Data Analysis and Revisions to Prototype - Prepare for Round 2: Data Collection - Recruit and implement data collection
11 Mar 29 (F to F)	**Reported Results on Round 1 and Associated Revisions DUE on Wiki** Report out on Round 1 Results Competitive Research Round 2: Data Collection begins	- Round 2: Collect Data - Read Kuniavsky: Chapter 15-16
12 Apr 5 (online)	Round 2: Data Analysis Consultants and Outsourcing in Software Development (Dr. van Rooij) Group work time for data analysis	- Read Kuniavsky: Chapter 17-18 - Round 2: Data Analysis and Revisions to Prototype
13 Apr 12 (F to F) AERA	Reporting and Corporate culture issues Round 2: Data Collection and Analysis Begin Work on user research report	- Round 2: Data Analysis and Identified Revisions to Prototype
14A Apr 19 (online)	Round 2: Data Collection and Analysis Groupwork in Data Analysis and Identified Revisions of Prototoype Prepare final presentation	- Round 2: Data Analysis and Implemented Revisions to Prototype - Work on Reporting Results from Round 2 - Work on Final Presentation

15 April 26 (F to F)	**Reported Results on Round 2 and Associated Revisions DUE on Wiki** Begin to prepare for final presentation of user research	- Work on Final Presentation
16 May 3 (online)	- Work on Final Presentation	- Work on Final Presentation
17 May 10	**FINAL Presentation DUE**	**Congratulations!**