SYLLABUS

GEORGE MASON UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT
INSTRUCTIONAL TECHNOLOGY

EDIT 752
Design and Production of Multimedia/Hypermedia Environments
Spring 2005
Wednesdays 4:30 p.m. - 7:10 p.m.
Commerce Building I 110

PROFESSOR/INSTRUCTOR:
Name: Dr. Brenda Bannan-Ritland
Office phone: (703) 993-2067
Office hours: Wednesdays 2:00-4:30pm or by appointment
Email address: bbannan@gmu.edu

COURSE DESCRIPTION:
A. Prerequisites: EDIT 730
B. Course Description from the University Catalog: Allows students to design, implement, and evaluate technology-based education and training materials using advanced computer-based authoring tools.
C. Expanded Course Description:

This course provides students with experience in evaluation, iterative design and production of e-Learning multimedia/hypermedia environments based on current theory and research in instructional design, usability testing and trends across educational research. The course requires students to create an evaluation research plan, carry it out, analyze results and iteratively design and produce improved e-Learning projects and prototypes. The course examines user needs, varying approaches to evaluation, and reporting of results as well as processes of iterative design and production of an e-Learning project.

REQUIRED TEXTS:
1. Observing the User Experience, Mike Kuniavsky, Morgan-Kaufmann, 2003
2. Evaluating E-Learning, William Horton, ASTD, 2001
3. Planning and Conducting Formative Evaluations, Martin Tessmer, Kogan Page, 1997
4. e-Reserve Readings

E-RESERVES

E-Reserves – to access the course readings placed on e-reserves go to http://oscr.gmu.edu/ and click on Search Electronic Reserves. Select the course number and instructor and enter a password that I will provide you. To open and print the articles you will need to have Adobe Acrobat Reader installed on your computer. Adobe Acrobat Reader is available for free download at http://www.adobe.com/products/acrobat/readstep2.html.

NATURE OF COURSE DELIVERY:
This course will be conducted in a blended learning seminar format incorporating a mix of lecture, required out of class readings, in-class discussions, online discussions, presentations and small group evaluation project work. Some class sessions will be devoted to advancing group tasks such as usability testing, redesign sessions and evaluation research data collection.

STUDENT OUTCOMES:
This course is designed to enable students to:
- Apply current approaches to evaluation and iterative design to an eLearning project
- Draft an evaluation research plan
- Gain experience in conducting usability testing
- Engage in iterative redesign and task analysis of new content if applicable
- Apply formative evaluation methods and Kirkpatrick’s levels of evaluation to the eLearning project
- Produce an evaluation report synthesizing evaluation results
- Create instructional materials using multimedia technology based on their proposed training solution
Instructional Design Competencies Achieved through Successful Completion of Course:

- Communicate effectively in visual, oral and written form
- Apply current research and theory to the practice of instructional design
- Utilize a variety of measures to determine the adequacy of learning and instruction
- Demonstrate the use of formative and (potentially) summative evaluation within practiced and contextualized experiences
- Demonstrate congruency among goals/objectives, instructional strategies and measures
- Apply appropriate evaluation strategies and techniques for assessing effectiveness of instructional and professional products
- Use the results of evaluation methods and techniques to revise and update instructional and professional products
- Collect, analyze and interpret data to modify and improve instruction
- Analyze current educational or instructional technology research on evaluation in order to evaluate projects and programs
- Demonstrate skill in the conception, design, implementation, and reporting of original research on evaluation in order to evaluate projects and programs

PROFESSIONAL STANDARDS:
Association for Educational Communications and Technology (AECT)

International Society of Performance Improvement (ISPI)
http://www.certifiedpt.org/standards.pdf

COURSE REQUIREMENTS
Each student is required to:
- Successfully collaborate and work with their peers in small groups
- Attend all classes as discussions, lectures, and hands-on activities are important parts of the learning process.
- Participate in the class
- Obtain any information missed due to absence
- Complete all assigned tasks on time
- Adhere to the Statement of Expectations (below)

Collectively, the design team is required to:
- Act professionally when dealing with participants in evaluation
- Divide fairly and equally the roles and tasks to the members of the small group
- Apply learning from in-class readings, discussions as well as proactively investigate out-of-class resources (books, references, materials, software) to conduct evaluations
- Produce a comprehensive, professionally developed, evaluation report, handouts and presentations
- Evaluate each member of the team constructively regarding the member’s contributions and collaboration

If a conflict in the team arises, it is the team’s responsibility to attempt to resolve any issues first. The instructor should be contacted only if the issue can not be resolved.
ASSIGNMENTS:

1. EVALUATION RESEARCH PLAN

Students in small groups of 3-4 will be required to identify an existing eLearning module or project for evaluation. These small groups will collaborate to draft a plan for conducting evaluation and user research related to the selected project. The small groups will identify and report roles and responsibilities in drafting the plan (which sections were written by whom, etc.). Students will synthesize readings related to drafting an evaluation research plan from Dabbagh & Bannan-Ritland, Kuniaivsky, Tessmer, Horton & Kirkpatrick and customize their research plan to the phase of their eLearning project. The elements of the plan will include (but not limited to) the following components:

- Introduction to project
- Need for evaluation research
- Purpose of evaluation research (Goals)
- Evaluation research strategy
- Objectives
- Social/cultural factors (resources/constraints)
- Desired results (information sought from evaluation research)
- Levels of evaluation research
  - Incorporation of formative evaluation methods and usability testing task scenarios/procedures as part of evaluation research plan
- Formality or informality of methods and rationale
- Congruence of evaluation methods with designed learning or performance activities
- Measurement approaches (sample surveys, tests, questionnaires, or protocols included)
- Logistical plan and activities to carry out evaluation research plan
- Statement of roles and responsibilities in creating research plan

2. USABILITY TESTING AND PRESENTATION

Students in their small groups will conduct a cycle of usability testing on the selected eLearning project. Based on the part of the development cycle (early, middle or late), the group will identify the target audience and recruit participants. The group will select features of the eLearning project to test and create appropriate tasks for testing these features. The group will write a script or protocol and conduct the usability test and interview. Analysis of notes, user task performance, time, errors and observations and consolidation of this information into stated results and redesign recommendations will be presented to the class with a presentation and usability results summary handout. Each group member must document their contribution to the usability testing phase during the presentation and is expected to actively participate in the presentation.
3. ITERATIVE REDESIGN AND TASK ANALYSIS

Students will redesign and/or create new sections of the selected eLearning project based on usability testing analysis and results. Students will explore task analysis approaches for creation or revision of new content to determine applicability of various task analysis techniques. Groups will redesign and develop new sections of the eLearning project that promotes improvement of the user experience based on usability testing. A description and posting of the previous design and current design features will be presented to the class online and highlight lessons learned related to the Web design and the specified project.

4. CONDUCT REMAINING EVALUATION RESEARCH

Student groups will implement the evaluation research identified in their plans (which may include focus groups, surveys, expert reviews, one-on-one formative evaluations, small group formative evaluations, learner assessments, additional usability testing, log files, etc.). Groups will implement at least one other evaluation research method (in addition to usability), analyze and report on results and recommendations in the final presentation described below. If time permits, additional revisions to the project may be implemented as well.

5. CONFERENCE PROPOSAL AND FINAL PRESENTATION

Student groups will propose, document and present their findings from their evaluation research conducted in a conference presentation format. The group will write up a conference proposal aligned with standards from the Association for Educational Communications and Technology that describes this project evaluation for potential presentation at a national conference (30 minute sessions). The presentation will be structured in a conference presentation format to overview the evaluation research goals and plan, methods and results, redesign and task analysis (if applicable) (Groups may elect to write the conference proposal early in the semester immediately following the evaluation plan so as to actually submit the proposal to an actual conference). Audience participants (all groups are required to attend all presentations) will complete evaluation forms of the presentation that will be considered in grading the final presentation.

CRITERIA FOR EVALUATION

<table>
<thead>
<tr>
<th>Evaluation Research Plan</th>
<th>Exceeds Expectations (E = Exceeds Expectations)</th>
<th>Meets Expectations (M = Meets Expectations)</th>
<th>Below Expectations (B = Below Expectations)</th>
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<tbody>
<tr>
<td></td>
<td>Comprehensive plan incorporating all required components. Well-conceptualized, logical alignment of need, purpose, strategy, objectives, etc. and reasonable selection of evaluation research activities. Plan is well-written and professionally presented. Plan exceeds expectations in thoroughness, rationale.</td>
<td>All components are presented in the plan. Research evaluation activities seem appropriate for project design. Writing and presentation are at an acceptable level. Plan integrates elements from related lectures and readings.</td>
<td>Plan is missing significant components or does not adequately address many stated research evaluation components. Research evaluation activities are not congruent with project design. Writing and presentation are lacking in professionalism.</td>
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<tr>
<td><strong>Usability Testing</strong></td>
<td>Usability testing presentation reflects a high level of planning of events, good selection of features for testing and attention to detail in presented protocol. Methods of analysis, results and redesign recommendations are presented to reflect a logical sequence of reported results and useful conclusions. Presentation is professionally delivered with handout summary.</td>
<td>Usability testing presentation demonstrates adequate planning, good selection of features for testing and carrying out of identified usability testing protocol (despite some potential challenges or problems). Analysis of results and redesign recommendations demonstrate adequate sequence of activities. Presentation and handouts are delivered in an acceptable manner.</td>
<td>Usability testing presentation demonstrates inadequate planning resulting in multiple problems or lack of data for analysis. Obstacles related to selected features for testing, procedures and protocols are apparent. Attempts to solve problems as they occurred were not evident. Presentation and handouts were not well-presented.</td>
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<td><strong>Iterative Redesign and Task Analysis</strong></td>
<td>Detailed description and posting of previous design and redesign is evident on class site on determined date. Description provides information on the targeted design features, problems identified in usability testing results and presents redesign efforts. Links or screen captures thoroughly demonstrate improved design. Task analysis methods are presented (if applicable). Logical, well-conceptualized conclusions or lessons learned about iterative design processes, web design and the project are presented online.</td>
<td>An adequate description and posting of previous design and redesign is posted on time. Description provides information on the targeted design features, problems identified in usability testing results and presents redesign efforts. Some links or screen captures demonstrate improved design elements. Task analysis methods are presented (if applicable). Some lessons learned about iterative design processes, web design and the project are presented online.</td>
<td>No description and posting of previous design and redesign by required date. No description on targeted design features, problems in usability testing results and redesign efforts. No links or screen captures presented. No lessons learned presented.</td>
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<td><strong>Conduct Remaining Evaluation Research</strong></td>
<td>Logical rationale for selection of evaluation research method given phase of project. Extensive research and planning (beyond provided resources in class) is evident to attempt to thoroughly prepare and investigate targeted factor of applied research. Organized measurement of identified eLearning factor is apparent with logical analysis and conclusions.</td>
<td>Selection of evaluation research method is adequate based on phase of project. Research and planning primarily based on in-class resources is evident. Investigation of targeted factor of applied research demonstrates established measures, adequate analysis, results and recommendations.</td>
<td>Limited or no implementation of evaluation research method. Incongruent selection of method to phase of project (selection of most convenient evaluation research method rather than selection of information that might most inform project and possible under current constraints). Limited or no investigation of targeted factor, measures, analysis and results presented.</td>
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<td>Conference Proposal and Final Presentation</td>
<td>Conference proposal demonstrates concise introduction, briefly summarizing related literature, goal and/or purpose of the evaluation research. Proposal and presentation provide concise and relevant description of evaluation research participants, methods of analysis, data sources, and results. Presentation is delivered in a professional manner that meets or exceeds the criteria presented in class related to delivering effective conference presentations. Presenters come well prepared, do not read from slides or cards, can answer follow up questions with ease and can speak extemporaneously.</td>
<td>Conference proposal incorporates recommended elements with adequate introduction, related literature, goal and purpose of research. Proposal and presentation provide concise and relevant description of evaluation research participants, methods of analysis, data sources, and results. Presentation is delivered in a manner that incorporates much of the criteria presented in class relative to delivering effective conference presentations. Presenters demonstrate good understanding of materials; Comes well prepared; Might be reading from slides or cards; Can answer follow up questions</td>
<td>Conference proposal does not incorporate recommended elements including introduction, related literature, goal and purpose of research. Proposal and presentation do not provide (or provide on a limited basis) description of participants, methods of analysis, data sources and results. Presentation is delivered in a manner that does not incorporate much of the criteria presented in class relative to delivering effective conference presentations. Presenters show little evidence of understanding of materials; do not come prepared; cannot answer follow up questions</td>
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GRADING SCALE/POLICY:

- **A** = Exceed expectations in all categories
- **A -** = Exceeds expectations in most categories and meets expectations in others
- **B+** = Meets expectations in most categories and exceeds expectations in others
- **B** = Meets expectations in all categories
- **B-** = Meets expectations in most categories and is below expectations in others
- **C** = Below expectations in most categories and meets expectations in others
- **F** = Below expectations in all categories
<table>
<thead>
<tr>
<th>DATE</th>
<th>PRIOR TO CLASS</th>
<th>CLASS TOPIC(S)</th>
<th>(AFTER CLASS) ASSIGNMENTS/ TASKS</th>
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</table>
| Jan 26 | • Welcome  
  • Participant information sheet  
  • Introductions  
  • Review syllabus  
  • Overview Design, Development and Evaluation  
  • Importance of Evaluation and Research in e-Learning or online learning  
  • Discuss potential projects for evaluation from work, other classes or current projects | | • Post individual profile  
  • Student Survey  
  • Determine potential projects for evaluation |
| Feb 2 | • Read:  
  - Dabbagh & Bannan-Ritland Chapter 7: Evaluation for Online Learning (e-Reserves)  
  - Kuniavsky - Chapters 1 through 4  
  - Phillips, Phillips & Hodges Evaluation Myths and Mysteries (e-reserves) | • Evaluation and Research inside and outside ISD  
  • Applied Evaluation Research Methods  
  • Iterative Design and Development  
  • Informal and Formal Evaluations | • Select project or prototype for evaluation  
  • Begin to identify potential target audience members for recruitment for usability testing and further evaluation  
  • Review Evaluation Research Plan examples in Blackboard |
| Feb 9 | • Read:  
  - Kuniavsky - Chapter 5-6  
  - Tessmer – Chapter 1 and 2  
  - Horton – Chapter 1, 2 and 11 | • Intersection of evaluation plan readings  
  • Evaluation Research Plan Requirements and Examples  
  • Discussion of evaluation methods and measures | • Begin drafting evaluation plan  
  • Determine target audience  
  • Begin recruitment |
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<tr>
<td>Feb 16*</td>
<td>Read:</td>
<td>• Guest Lecturer – Dr. Leslie Carter, usability expert&lt;br&gt;• Overview of Methods of Usability Testing&lt;br&gt;• Discussion of creating task scenarios, how to measure usability and preparing test materials&lt;br&gt;• Tips for conducting the usability test and analyzing the results</td>
<td>• Continue drafting evaluation plan&lt;br&gt;• Determine features to test for usability testing&lt;br&gt;• Determine what to measure (actions, behaviors, perceptions, opinions, etc.)&lt;br&gt;• Draft usability protocol or task scenario and post for online discussion and review</td>
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<td>- Kuniavsky – Chapter 10 Usability Tests&lt;br&gt;- Dumas&amp; Redish – Chapter 12-14 (e-reserves)</td>
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<td>Feb 23</td>
<td>Read:</td>
<td>• Overview of measurement methods&lt;br&gt;• Intersections across expert evaluation, diary studies and advisory boards&lt;br&gt;• Intersections across usability and one-to-one formative evaluation&lt;br&gt;• Revise usability protocol, task scenario</td>
<td>• Continue drafting evaluation plan&lt;br&gt;• Revise usability protocol, task scenarios based on feedback</td>
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<td>- Barksdale &amp; Lund – Chapter 2 (eReserves)&lt;br&gt;- Tessmer – Chapters 3 &amp; 4&lt;br&gt;- Kuniavsky – Chapter 12</td>
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<td>Mar 2</td>
<td>Read:</td>
<td>• Intersections across small group, focus group&lt;br&gt;• Level 1 (Response) and Level 2 (Learning)</td>
<td>• Continue Drafting Evaluation Plan&lt;br&gt;• Finalize plans for usability testing&lt;br&gt;• Conduct Usability testing</td>
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<td>- Tessmer – Chapter 5&lt;br&gt;- Kuniavsky – Chapters 9 &amp; 11&lt;br&gt;- Horton – Chapter 3 and 4</td>
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<td>Mar 9</td>
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<td>• Read:</td>
<td>• Conduct Usability testing</td>
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<td>- Tessmer – Chapter 6</td>
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<td>- Kuniavsky – Chapters 13 &amp; 16</td>
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<td>• Field trials</td>
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<td>• Level 3 (Performance) and Level 4 (Results)</td>
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<td>• Log files</td>
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<td>• Variations and combinations</td>
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<td>• Finalize evaluation plan</td>
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<td>• Usability testing planning or analysis</td>
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<td>DUE: EVALUATION PLAN, post final plan on course site by Friday, Mar 12th at 9:00am</td>
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<td>Mar 16*</td>
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<td>• SPRING BREAK</td>
<td>• Conduct usability testing</td>
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<td>Mar 23*</td>
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<td>• Read:</td>
<td>• Conduct and/or analyze results of usability testing</td>
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<td>- Jonassen, Tessmer &amp; Hannum – Chapters 4, 8 &amp; 21 (e-reserves)</td>
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<td>• NO IN-CLASS SESSION – session devoted to conducting usability testing</td>
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<td>Mar 30</td>
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<td>• Review task analysis</td>
<td>• Analyze results of usability testing</td>
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<td>• In-class Group work: Final analysis of Results of Usability testing and work on usability presentation</td>
<td>• Finalize Usability Presentation</td>
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<td>Apr 6</td>
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<td>• Presentations – in class</td>
<td>• Prepare for remaining evaluation research</td>
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<td>DUE: USABILITY PRESENTATION and HANDOUT</td>
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<td>Apr 13*</td>
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<td>• NO IN-CLASS SESSION: - session devoted to iterative redesign and task analysis</td>
<td>• Carry out plan for remaining evaluation research</td>
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<td>Apr 20</td>
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<td>• Read:</td>
<td>• Carry out plan for remaining evaluation research</td>
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<td>- Fowler – Chapter 5 (pgs. 69-86) (e-Reserves)</td>
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<td>• Tips for designing surveys and questionnaires</td>
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<td>• Finalize iterative redesign and task analysis</td>
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<td>DUE: POST DESCRIPTION OF ITERATIVE REDESIGN AND TASK ANALYSIS (if applicable) posted by Friday, April 22nd at 9:00am</td>
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| Apr 27 | • Read:  
  - Kuniavsky – Chapter 17  
  - Wineburg – Ten rules for keeping your audience awake (e-reserves)  
  • Analysis of remaining evaluation data  
  • Prepare Conference Proposal and Presentations |  | • Carry out plan for remaining evaluation research  
  • Analysis of remaining data evaluation data  
  • Prepare conference proposal and presentation |
| May 4 | • Analysis of remaining evaluation data  
  • In-class session: Conference proposal and presentation preparation |  | • Analysis of remaining evaluation data |
| May 11 | • FINAL PRESENTATION |  | • CONGRATULATIONS! |