SYLLABUS

GEORGE MASON UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT
INSTRUCTIONAL TECHNOLOGY

EDIT 792 SECTION 5T1
Project Development Practicum
Spring 2005
4:30-9:30pm/Mondays
Arlington Campus - Arlington Original Building Room 242

PROFESSOR(S):
Name: Dr. Brenda Bannan-Ritland
Office phone: 703-993-2067 (work) or 703-875-8195 (home)
Office location: Commerce II Room 109
Office hours: Mondays 6:30-7:30pm in Arlington or by Appointment
Email address: bbannan@gmu.edu

COURSE DESCRIPTION:
Designed for students in the Instructional Technology Track 1 Design and Development Immersion Program, this course option allows students to join a design team focusing on the instructional design process and development of a technology-based instructional or training product. Students are expected to reflect on their involvement and process of instructional design through the submission of assignments or portfolio at the culmination of the experience.

NATURE OF COURSE DELIVERY:
This intensive 9-credit course experience involves face-to-face classroom meetings that comprise opportunities for collaborative, participatory instructional design sessions as well as online discussions, reflections and participation. Asynchronous and synchronous methods of online delivery will be required for participation in the course. Electronic submission of project design artifacts will also be required.

STUDENT OUTCOMES:
This course is designed to enable students to:

• Apply research, design and development processes to an authentic instructional design project
• Discuss, reflect and contribute to collaborative dialogue on professional practice, theory, and research in inquiry-based science and reading comprehension
• Document learning, project contributions and growth as a teacher-practitioner and designer
• Participate in online meetings, forums or discussions that contribute to the progression of the project
• Investigate inquiry-based science in their classroom and school
• Participate in research-based activities related to the project
• Summarize and present research, design and development experience and participation in the development of a Web-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).

- By participating in an authentic, project-based and guided instructional design experiences, students will practice, integrate and apply concepts and techniques related to the instructional design and development process in a realistic context

REQUIRED TEXTS:


For Reading and Reference from last semester’s booklist:


REQUIRED READINGS:
E-Reserves – to access the course readings on e-reserves go to [http://oscr.gmu.edu/](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](http://www.adobe.com/products/acrobat/readstep2.html).

COURSE REQUIREMENTS, PERFORMANCE-BASED ASSESSMENT, AND EVALUATION CRITERIA:
A. Requirements
An overall listing of required assignments/activities is provided below. Due to the limited number of face-to-face contact hours in this course that comprise 6 of the 9-credits, online collaborative and reflective activities will be required to encompass the additional 3-credits. The following table provides a detailed description of these assignments as well as a rationale or purpose for each and the performance-based assessment method. Please see Section B for an accompanying rubric and more detail on student assessment in this course.

1) In-class Design Discussion and Contributions
   a. Collaborative Weekly Design Discussion Contributions (extremely important this semester!)
   b. Teacher Lead Discussion on Assigned Readings*
   c. Teacher Lead on Documenting Design Progression*
      i. Draft Status Report on Discussion
      ii. Document Emerging Design Concept, Theoretical Model
      iii. Determine Next Steps
      iv. Post to Project Website

2) Online Activities
   a. Weekly collaborative discussions applying readings to our design (*extremely important this semester to process readings thoroughly to inform our design)
   b. Bi-monthly self-reflection blogs (*NEW – email instructor when you have then posted)
   c. TBD scheduled interpersonal network interactions – chat opportunities

3) Research Activities
   a. Student Think Aloud Research Data Collection*
   b. Completion of Survey Data Collections
   c. Individual Interviews

4) Design Process*
   a. Cooperative Inquiry Sessions with students
   b. Drafting design concept
   c. Use Cases and interface content modeling
   d. Flowcharts, wireframes
   e. Involvement in design of assessment
   f. Evaluation activities

5) Presentation of Design Prototype and Process to Advisory Board

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<thead>
<tr>
<th>Detailed Description of Major Assignments/Activities</th>
<th>Rationale/Purpose</th>
<th>Performance-based Assessment</th>
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<tr>
<td><strong>In-class Design Contributions</strong> – Full involvement in class design discussions is expected. Because your participation in this process is valued and needed for this research, unexcused absences will impact grades in the course. More than two unexcused absences will result in a C in the course. In-class design collaborative sessions are most critical and extremely important contributions to this research project and course. Your full participation and attention to class activities will be the foundation for a well-designed product and research results. *Students will be expected to assume discussion lead during two class sessions summarizing the assigned readings and provoking productive thought based on their readings for progression our design progress. Students will also be responsible for producing the a status report for two class session summarizing our discussion, activities, updating our design concept, theoretical model, etc.</td>
<td>Respectfully communicating personal perspectives, presenting ideas, negotiating, creating, discussing, coming to consensus, examining what resources are, available, trying to solve the problem. Actively pursuing the best instructional design possible, intersecting inquiry science, reading comprehension and metacognition.</td>
<td>Observations, Reflections, Self-report, Team blog site</td>
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| **Collaborative Weekly Online Discussion Contributions, Bi-monthly Self Reflection Blogs and Interpersonal Network Interactions (additional 3 course credits)** - Online activities will be required to comprise the additional 3-credits of the course. 1) Weekly collaborative, asynchronous discussions contributions (2-3 paragraphs by Sunday evenings at 9:00pm) based on a posed question. *Extremely important this semester is to use the online environment to continue our design activities – to brainstorm, produce and refine design ideas to elicit the best product we can during the semester. 2) Bi-monthly self-reflections (3-4 paragraphs) are an opportunity to personally reflect on your teaching practice, learning as well as this design, Proactively processing readings, constraints, affordances to continually contribute design ideas throughout the week. This requirement of weekly contributions to our design process will allow us to produce an optimal design in a short time (16 weeks). Conscious commitment, competence and value of overarching research process goals; | Contributions, Transcripts, Discussion Board, Team blog site, Chat opportunities |
research and development experience (posted by the 16th and 30th of the month). Self-reflection blogs also provide an area to self-report contributions to the project for review by the professor.

3) **TBD Interpersonal Network**

Interactions or online chat opportunities are structured to facilitate communication among the team at scheduled opportunities.

| **Student Think Aloud Research Data Collection** – each teacher will gain permission and select three students to interview about their knowledge of slow landform processes and their reading comprehension processes in science based on an identified protocol. These sessions will be transcribed by the undergraduates on the team and analyzed for design and research purposes. Teachers will be responsible for conducting the interviews according to the established protocol and assist in analyzing the data. | **Provide a first hand view of student understanding of related geomorphology concepts,** provide a **baseline of data related to our users and reading comprehension abilities.** | **Concept Maps, Reflections** |
| Design Process – Participate actively in refining design concept, theoretical model, use cases, interface content modeling, flowcharting, wireframing. Design of assessment and conducting evaluation activities. These activities may be completed in sub-teams, whole class or individually depending on the selected content material. | **Participate in systematic design processes that operationalize produce and progressively refine design ideas. Work collaboratively to produce the best design possible.** | **Case Study, Reflections, Summary Presentation** |
| **Presentation of Design Prototype and Process to Advisory Board** – organize and prepare presentation that communicates the overall process of inquiry or investigation across the entire semester and the status of the resulting prototype at the end of the semester along with entire design and development team. Presentation will be made to the grant advisory board and invited guests. | **Through the process of presentation we share knowledge we have gained; Design information presentation for a specific audience** | **Reflections, Presentation** |
B. Criteria for evaluation

Criteria for evaluation is represented in the following rubric components that align with the major assignments/activities categories in the overview listing presented above. Individual student performance is evaluated using the criteria stated when reviewing the performance-based methods of assessment (see above table). The criteria include a range of performance expectations in the exceeds expectations, meets expectations and below expectations categories. Various methods and types of evidence both on-line and in-class interactions will be used to individually evaluate students. Students will evaluate themselves and instructor will evaluate students on each category. The rubric will be used to evaluate student performance and provide feedback at the mid-point and at the end of semester. Specific dates of review evaluation will be announced in class. On these dates you will be required to permit review of your self-reflection blogs that will list your project contributions using the rubric below. The professor will confidentially email feedback to individual students based on the rubric components at the mid-point and end of the semester.

<table>
<thead>
<tr>
<th>Exceeds Expectations</th>
<th>Meets Expectations</th>
<th>Below Expectations</th>
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<tbody>
<tr>
<td>(E = Exceeds Expectations)</td>
<td>(M = Meets Expectations)</td>
<td>(B = Below Expectations)</td>
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**Design Discussion and Contributions (self, instructor)**

- **Exceeds Expectations**: Full involvement, attention and participation in class design sessions is evident. Attended all design sessions across semester. Enthusiastic contribution of ideas from own practice, reflection, insights and readings. Took full lead on discussion provoking thoughtful consideration of readings for design purposes. Actively engaged others and thoroughly documented discussion and progress for next session. Evidence of progression of design concept, theoretical model and emergent technology design.

- **Meets Expectations**: Involved and participated in class design sessions. Attended all design sessions across semester (with exception of an excused absence or emergency discussed with instructor). Contributed ideas from own practice, reflection, insight and readings. Led discussion and processing of readings for design discussion. Engaged others in presenting ideas from readings applicable to design. Promoting design discussions and documented discussion and progress.

- **Below Expectations**: Two or more unexcused absences from class design sessions. Passive involvement in design sessions with limited ideas, reflection, insights from readings and teaching practice. Little or no follow-up in documenting design ideas, work or related tasks. Little or no evidence of progression of ideas from led session.
| **Online Activities – Reflections** (self, instructor) | Bi-monthly self-reflection blog contributions of 3-4 paragraphs were made each month. Reflections demonstrate deep thought about the integration of inquiry science, reading comprehension and metacognitive strategies for technology. Clear evidence of deep thinking continuing in processing, reflecting and contributing additional design ideas online. Individual reflection on and contributions to project are readily apparent. | Bi-monthly self-reflection blog contributions of 3-4 paragraphs were made each month. Evidence of insights and growth as a teacher practitioner and an instructional designer; connections between inquiry science, reading comprehension, metacognition and technology design are readily apparent. Evidence of continual thinking about design. Listings of individual contributions to project are included in regular reflections. | Bi-monthly self-reflection blog contributions of 3-4 paragraphs were not made each month. Little or no evidence of reflective thinking about teaching practice, teacher research experience, and design activities/processes. No listing of individual contributions to project or process of design and development. No consistent periods of reflections evident. No progression of thought about design. |
| **Online Discussion Contributions** (self, instructor) | Demonstrated full participation in weekly online discussions/meetings, Two to three paragraph discussion contributions were made by Sunday at 9:00pm each week and scheduled chat opportunities High quality contributions that intersect readings, experiences to contribute and/or provoke design ideas. Evidence of continual thought related to design progress throughout week. | Participated in online meetings, Two to three paragraph discussion contributions were made by Sunday at 9:00pm each week, participated in chat opportunities. Consistent contributions that stimulate design discussion and ideas. Evidence for a willingness to continue reflection on readings, discussions to promote design progress. | Noted absences at online meetings, Two to three paragraph discussion contributions were not made by Sunday at 9:00pm each week, no involvement in chat opportunities. Little or no contributions that stimulate design discussion or ideas. Little or no evidence for continual thought related to design readings, discussion and progress. |
| **Student Think Aloud Research Data Collection** (self, instructor) | Exceptional effort apparent in attempting to implement established think aloud protocol with students. High level of contribution to successfully collecting this data with a new research method and informing others. | Good effort implementing the established think aloud protocol with students. Contributions to making research data collection successful for self and others. Collection, analysis | Missing, late or non-completion of think-aloud research data collection. |
| **Design Process** (self, instructor) | Exceptional effort apparent in creative and valuable design contributions to project. Proactively participating in generating use cases, interface content modeling, wireframing etc. Progressively refined design ideas throughout all stages to produce well-conceptualized design that adheres to design concept. Successfully negotiated design ideas with research team and worked together for the good of the project. | Adequate effort apparent in valuable design contributions to project. Actively participated in generating use cases, interface content modeling, wireframing etc. Progressively refined design ideas throughout all stages to produce well-conceptualized design that adheres to design concept. Negotiated design ideas with research team and worked together for the good of the project. | Little or no effort apparent in design contributions. Little or no active participation in generating use cases, interface content modeling, wireframing etc. Little or no contribution to refining design ideas that adheres to design concept. Not successful at negotiating and comprising on design ideas with research team. Blocked progress on project. |
| **Presentations** (self, instructor) | Presentations demonstrate mastery understanding of materials; Comes well prepared; Is not reading from slides or cards; Can answer follow up questions with ease; Can speak extemporaneously | Presentations demonstrate good understanding of materials; Comes well prepared; Might be reading from slides or cards; Can answer follow up questions | Presentation show little evidence of understanding of materials; doesn't come prepared; Cannot answer follow up questions |

**C. Grading Scale**

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<tr>
<th>Grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>Exceed expectations in all categories</td>
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<tr>
<td>A -</td>
<td>Exceeds expectations in most categories and meets expectations in others</td>
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<tr>
<td>B+</td>
<td>Meets expectations in most categories and exceeds expectations in others</td>
</tr>
<tr>
<td>B</td>
<td>Meets expectations in all categories</td>
</tr>
<tr>
<td>B-</td>
<td>Meets expectations in most categories and is below expectations in others</td>
</tr>
<tr>
<td>C</td>
<td>Below expectations in most categories and meets expectations in others</td>
</tr>
<tr>
<td>F</td>
<td>Below expectations in all categories</td>
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**COURSE SCHEDULE**

**Please note that due to the dynamic nature of an authentic instructional design and development experience, this weekly schedule is subject to change. All changes**
will be announced on the project online system and in-class so please keep abreast of any changes.

The weekly schedule is based upon weekly class sessions held Monday evenings from 4:30-9:30pm and weekly online collaborative contributions and discussions. The topic/activities column briefly describes the topics and activities addressed during the week/date identified in that column. The assignment/resources for next session column provides information on readings, resources and assignments that will be expected to be read and completed for the following class session.

<table>
<thead>
<tr>
<th>Week/Date</th>
<th>Topic/activities</th>
<th>Assignments/Resources for Next Session</th>
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<tbody>
<tr>
<td>Week 1: Jan 24</td>
<td>Welcome Back! State of the Project Our Challenge: Goals for Spring Syllabus Gathering information from students Getting Reacquainted</td>
<td><strong>Online Questions</strong>: What are the inquiry and reasoning processes evident in the geosciences? <strong>Assignment</strong>: 1) Select a high, average and low ability science-reading learner in your classroom for future student focus group assignment. 2) Obtain child permission forms from Brenda and John and send them home with students THIS WEEK to gain permission prior to this assignment in February. 3) Complete Literacy SEC survey online <strong>Reading(s) for Following Week:</strong> e-Reserves: 1) Ault, C.R. – Criteria of Excellence for Geological Inquiry: The Necessity of Ambiguity 2) Ault, C.R. – Research on Problem Solving: Earth Science (repeat from last semester) 3) Goncalves, P.W. &amp; Carneiro – Global science literacy: From geology teaching to earth system science teaching</td>
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| Week 2: Jan 31 | Further development of inquiry model in geomorphology  
Generation of theoretical model for project and design concept | **Online Questions:** What is the inquiry model and the reasoning processes that we want to evoke in our project? What thinking processes/strategies can we articulate for 3rd-5th grade classrooms in learning geomorphological content?  
**Reading(s) for Following Week:**  
Books: 1) Zohar, A. – Chapters 1 through 3, pps 1-40  
| Week 3: Feb. 7 | Thinking deeply about student learning and strategies in geomorphological inquiry  
Refinement of theoretical model for project  
Introduction of Student Think Aloud Research Assignment | **Online Question:** What are the instructional design principles that we want to embed in our design? What are important issues to keep in mind related to children’s understanding of inquiry in geology/geomorphology?  
**Assignment:** Prepare for Student Think Aloud Research Assignment  
**Reading(s) for Following Week:**  
Books: 1) Zohar, A. – Chapters 4 pps. 41-54  
e-Reserves: 1) Metz-Children’s Understanding of Scientific Inquiry: Their Conceptualization of Uncertainty in Investigations of Their Own Designs (NEED TO PROVIDE DIRECTIONS FOR ACCESSING THROUGH GMU LIBRARY) |
| Week 4: Feb 14 | Our Theoretical Model and Assessment of Reasoning Children’s Thinking Processes in inquiry and implications for design Refinement of theoretical model | **Online Question:** How can we integrate think-alouds to learn about our students’ understanding of slow landform change and their reading comprehension in science?  
**Assignment:** Prepare for student think aloud research assignment |
| **Reading(s) for Following Week:**  
| Week 5: Feb 21 | Teachers Thinking and Practice The Nature of Science and our Project  
- explicit teaching of the nature of science in geomorphology  
Teacher Pedagogical Knowledge in Geomorphology  
Supporting Teachers in our Project | **Online Question:** How do we intersect our inquiry model with reading comprehension? Where are the opportunities for reading in our model? How can we incorporate multiple sources of text?  
**Assignment:** Conduct student think aloud research assignment |
| **Reading(s) for Following Week:**  
Books:  
Saul – Crossing Borders, Chapter 4: Larry Yore – Why do Future Scientists Need to Study the Language Arts? P. 71-94  
e-Reserves:  
1) Norris, S.P. & Phillips, L.M. – |
| Week 6: Feb 28 | How Literacy in its fundamental sense is central to scientific literacy  
| --- | --- |
| Intersecting Reading with our Theoretical Model  
Incorporating multiple sources of text – when, where and why?  
Status on student think aloud research data collection  
Document emerging design concept and theoretical model | **Online Question:** How can we incorporate a comprehensive view of scientific literacy and reading processes (vs. the more common simple view) in our project? What does the research on metacognition in comprehension instruction have to offer us?  
**Assignment:** Conduct student think aloud research assignment |
| **Reading(s) for Following Week:**  
**Book:** Otero, Leon & Graesser – Chapters 1 through 3  
**e-Reserves:**  
| Week 7: Mar 7 | Inquiry Model intersected with Metacognitive reading comprehension  
Operationalizing metacognition in our project |
| **Online Question:** What can we learn from different scientific texts and well-designed textbooks to benefit our design? What design elements might we consider to assist english-language learners? How to integrate these ideas with metacognitive support for reading comprehension? |
| Week 8: *Mar 14 | **Scheduled GMU spring break – class held to substitute for APS spring break Mar 21-25**<sup>th</sup>. Scientific visual imagery, explanations and comprehension of science text | **Online Question**: What can we use related to visual imagery, explanations and psychological models of comprehension and memory of text in our design?  
**Reading(s) for Following Week**:  
Books: Otero, Leon & Graesser – Chapters 1 through 7-10  
Dabbagh & Bannan-Ritland – Chapters 5 & 6 and online examples (URL will be provided on class website) |
| --- | --- | --- |
| Week 9: *Mar 21 | No Class Meeting for APS Spring break | **Online Question**: None this week  
**Assignment**: Read student think aloud data when posted  
**Reading(s) for Following Week**:  
Book: Otero, Leon & Graesser – Chapters 1 through 11-13 |
| Week 10: Mar 28 | Analyzing student data  
Review pedagogical models  
Discuss SMART Project  
Use Cases | **Online Question:** What pedagogical models or technology features are applicable to our design?  
**Assignment:** Continue work on use cases  
**Reading(s) for Following Week:**  
Books: Otero, Leon & Graesser – Chapters 1 through 14-16  
E-Reserves  
| --- | --- | --- |
| Week 11: April 4 | Use Cases  
Interface Content Models | **Online Question:** What other use cases might we generate?  
**Assignment:** Generate use cases  
**Reading(s) for Following Week:**  
Books: Otero, Leon & Graesser – Chapters 1 through 16-17  
e-Reserves: |
| Week 12: April 11 | Interface Content Models | **Online Question:** What are we missing in our interface content |
| Week 13: April 18 | **Introduction to Wireframing**  
Design, Development and Review |
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<td><strong>Online Question:</strong></td>
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<td><strong>Reading(s) for Following Week:</strong></td>
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<tr>
<th>Week 14: April 25</th>
<th><strong>Design, Development and Review</strong></th>
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<tr>
<td><strong>Online Question:</strong></td>
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<tr>
<td><strong>Assignment:</strong></td>
<td>Prepare Presentation to Advisory Board</td>
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<td><strong>Reading(s) for Following Week:</strong></td>
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<tr>
<th>Week 15: May 2</th>
<th><strong>Design, Development and Review</strong></th>
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<tr>
<td><strong>Online Question:</strong></td>
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<tr>
<td><strong>Assignment:</strong></td>
<td>Continue to Prepare Presentation to Advisory Board</td>
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<td><strong>Reading(s) for Following Week:</strong></td>
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<tr>
<th>Week 16: May 9</th>
<th><strong>Presentation to Advisory Board</strong></th>
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**COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT STATEMENT OF EXPECTATIONS:**
The Graduate School of Education (GSE) expects that all students abide by the following:

Students are expected to exhibit professional behavior and dispositions. See gse.gmu.edu for a listing of these dispositions.

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.