EME 6414c Web-Based Instruction – Course Syllabus

COURSE DESCRIPTION
This course incorporates concept, theory, and research to the design, development, and evaluation of web-based instruction (WBI). Included in the course is the production of a WBI rapid prototype based on sound principles of learning theory and instructional design.

PURPOSE OF THE COURSE
Students in this course will acquire the skills necessary to design web-based instructional programs. In addition, students will develop the knowledge, skill, and abilities needed to provide leadership in the areas of web-based design, development, and delivery of instruction. Students will design and develop effective instruction, as well as identify and select other effective existing web-based instruction.

MAJOR TOPICS/GOALS
Upon completion of this course, students will have the ability to plan for WBI; analyze and select effective WBI; design, develop and implement WBI; and be able to formatively evaluate and revise WBI lessons.

Topic: Creating a Framework for Web-Based Instruction
A. Synthesize the current body of research in the field on the historical context of instruction through telecommunication protocols in public education.
B. Analyze the advantages and disadvantages of using WBI for teaching and learning.
C. Evaluate current instructional systems and products to determine characteristics of well-designed WBI.

Topic: The Impact of Computing on Public Education
A. Summarize the use of telecommunications to form effective teaching systems.
B. Assess the strengths and weaknesses of teachers and barriers faced by teachers who attempt to use telecommunications systems for teaching and learning.
C. Conduct an analysis of the impact telecommunications instruction has made on education, teaching and learning.
D. Summarize journal articles and online documentation to ascertain how telecommunications instruction is be integrated systematically into teaching and learning.
E. Compare and contrast several methodologies for telecommunications in public education.

Topic: Incorporating Principles of Learning Theory into WBI Lessons
Goals:
A. Apply principles of learning theory in the systematic design on WBI.
B. Compare and contrast behavioral, cognitive, and constructivist learning theories as it relates to the application of WBI.
C. Describe implications for the design of WBI based on the principles of instructional design.
D. Review and summarize related research on the role of practice in designing WBI.
E. Synthesize the research on types of feedback and its role in the learning process through WBI.
F. Summarize the role of alignment in designing WBI.
G. Develop a testing strategy for assessing student knowledge when receiving instruction.
through WBI.
H. Compare and contrast the influence learner control will have on student learning outcomes.
I. Compare and contrast the influence navigational issues will have on student learning outcomes.

**Topic: Analyzing a Topic for the Design of WBI**
A. Select appropriate mediums for the delivery of instruction based on the application of media selection models and approaches.
B. Conduct a learning task analysis that will be used in the design of WBI.
C. Synthesize the learning task analysis to suggest three component objectives for the design of WBI.

**Topic: Capturing the Capabilities of WBI in Design Documentation**
A. Synthesize analysis information to develop a flowchart representation of the web-based product to be developed.
B. Compare and contrast the major classifications of WBI.
C. Apply strategies for directing student attention (cueing) to important information on WBI.
D. Compare and contrast levels of interactivity and describe how interactivity can be promoted in the WBI.
E. Describe strategies to manage and evaluate user input on a rapid prototype of a WBI lesson.
F. Apply all instructional design strategies and techniques to the design of storyboards to be utilized in the creation of a rapid prototype of WBI.

**Topic: Developing Effective WBI**
A. Evaluate basic options available in available authoring languages.
B. Demonstrate the organizational features of writing for WBI.
C. Demonstrate several techniques when authoring the rapid prototype of WBI. Techniques may include interactivity, relevant practice and feedback, using orienting activities, and providing a framework for consistent screen design.
D. Demonstrate skill in using languages for WBI.

**Topic: Methods for Evaluating WBI**
A. Compare and contrast alternative methods for formative evaluation of WBI.
B. Determine the implications for evaluating WBI at alpha and beta level testing.
C. Provide a rationale for instrumentation available for evaluation.

**EVALUATION AND FEEDBACK**
Students must complete and achieve competency on the WBI authoring language tutorials prior to the third week of class.
The following are course requirements:

- **Class Activities.** Each student will complete assigned class projects and participate in online discussions.
- **Design Document.** Each student will complete a design document for a WBI lesson based on assignment specifications.
- **Web-Based Instruction.** Each student will produce a complete WBI rapid prototype on a selected topic. The WBI must be made available for all class members and instructor to view from the individual student’s Google Site.

- **Annotated Bibliographies.** Each student will review the research literature on specific elements related to the design of WBI and submit 3 annotations throughout the course. These articles should be in different areas of research and should not be those provided by the instructor. Articles should be of a substantive nature. Annotations should be in APA style.

Evaluation of all written assignments and web development is based upon instructor’s judgment of the knowledge of facts and conventions, legitimacy of reasoning, and rational processes used by students. Grading procedures vary by instructor and range from a letter grading of written work, class participation, and examinations to the amount of acceptable work completed above the minimum ("C") grade. Grade requirement minimum acceptable level includes, but is not limited to, thought processes, accuracy of knowledge presented, and quality of expression. The course grade will be determined as follows:

- Class Activities & Participation: 30%
- Design Document: 20%
- Rapid Prototype: 35%
- Annotated Bibliographies (3): 15%

**TEXTBOOK**