

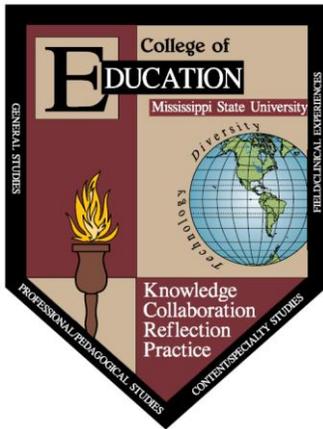
MISSISSIPPI STATE UNIVERSITY COLLEGE OF EDUCATION
DEPARTMENT of INSTRUCTIONAL SYSTEMS and WORKFORCE DEVELOPMENT
COURSE SYLLABUS

Course Prefix and Number: TECH 8443
Course Title: Theories of Multimedia Learning
Credit Hours: 3 credit hours
Method of Instruction: *LECTURE = UCCC Code C*

Catalogue Description :

Three hours lecture. This course reviews multimedia design principles that are based on empirical research studies and the cognitive theory of multimedia learning to foster effective multimedia instruction.

College of Education Conceptual Framework:



The faculty in the College of Education at Mississippi State University are committed to assuring the success of students and graduates by providing superior learning opportunities that are continually improved as society, schools, and technology change. The organizing theme for the conceptual framework for the College of Education at Mississippi State University is educational professionals - dedicated to continual improvement of all students' educational experiences. The beliefs that guide program development are as follows:

1. **KNOWLEDGE** - Educational professionals must have a deep understanding of the organizing concepts, processes, and attitudes that comprise their chosen disciplinary knowledge base, the pedagogical knowledge base, and the pedagogical content knowledge base. They must also know how to complement these knowledge bases with the appropriate use of technology.
2. **COLLABORATION** - Educational professionals must continually seek opportunities to work together, learn from one another, forge partnerships, and assume positions of responsibility.
3. **REFLECTION** - Educational professionals must be willing to assess their own strengths and weaknesses through reflection. They must also possess the skills, behaviors, and attitudes necessary to learn, change, and grow as life-long learners.
4. **PRACTICE** - Educational professionals must have a rich repertoire of research-based strategies for instruction, assessment, and the use of technologies. They must be able to focus that array of skills on promoting authentic learning by all students or clients, while exhibiting an appreciation and commitment to the value and role of diversity.

Course Objectives:

Upon completion of this course, students will be able to:

1. Discuss research on multimedia learning (CFPO #3, 7, 13)
2. Delineate the science of instruction and learning (CFPO #1, 3, 8, 10, 11, 13)
3. Identify twelve principles of multimedia design (CFPO #1, 2, 3, 4, 7, 8, 10, 13)
4. Apply theory-grounded approach to multimedia design (CFPO #1, 3, 4, 7, 8, 10, 11, 12, 13)
5. Design effective multimedia instruction (CFPO #1, 3, 4, 7, 8, 10, 11, 12, 13)
6. Determine the cognitive theory of multimedia instruction (CFPO #1, 3, 4, 7, 8, 10, 11, 12, 13)

Detailed Course Outline:

1. Introduction to Multimedia Learning (4 hours)
 - What is multimedia instruction? (1 hour)
 - Three views of multimedia messages (1 hour)
 - The delivery-media view
 - The presentation-modes view
 - The sensory-modality view
 - Two approaches to multimedia design (1 hour)
 - Technology-centered approaches
 - Learner-centered approaches
 - Three kinds of multimedia learning outcomes (1 hour)
2. The Science of Instruction: Determining what works in multimedia learning (3 hours)
 - What is the science of instruction?
 - What is instruction?
 - Multimedia instructional messages and measures
 - Multimedia instructional methods
 - Determining what works in multimedia learning
3. The Science of Learning: Determining how multimedia learning works (3 hours)
 - What is the science of learning and theory-grounded practice?
 - Three assumptions of a cognitive theory of multimedia learning
 - Five steps in a cognitive theory of multimedia learning
 - Processed in a cognitive theory of multimedia learning
 - Multimedia learning
 - Extraneous cognitive processing
 - Essential cognitive processing
 - Generative cognitive processing
4. Principles for Reducing Extraneous Processing in Multimedia Learning (15 hours)
 - Introduction and Research on
 - Coherence principle (2 hours)
 - Signaling principle (2 hours)
 - Redundancy principle (2 hours)

- Spatial contiguity principle (2 hours)
 - Temporal contiguity principle (2 hours)
 - Implications for multimedia learning and design (5 hours)
 - Coherence principle (1 hour)
 - Signaling principle (1 hour)
 - Redundancy principle (1 hour)
 - Spatial contiguity principle (1 hour)
 - Temporal contiguity principle (1 hour)
5. Principles for Managing Essential Processing in Multimedia Learning (9 hours)
- Introduction and research on
 - Segmenting principle (2 hours)
 - Pre-training principle (2 hours)
 - Modality principle (2 hours)
 - Implications for multimedia learning and design (3 hours)
6. Principles for Fostering Generative Processing in Multimedia Learning (6 hours)
- Introduction and research on
 - Multimedia principle (2 hours)
 - Personalization, voice, and image principles (2 hours)
 - Implications for multimedia learning and design (2 hours)
7. Principle of Multimedia Design (5 hours)
- Principles of multimedia design (3 hours)
 - Boundary conditions for design principles (1 hour)
 - The contributions and challenges of research on multimedia learning (1 hour)

Text(s):

Mayer, R. E. (2009). *Multimedia learning* (2nd ed.). Cambridge, N.Y.: Cambridge University Press.

Description of Instruction:

(Campus 1 & 5) Lecture; class members will be exposed to lecture, class discussion, individual projects, group activities, exams and project presentations during this course. Student participation will play a large part in the success of instructional delivery herein.

(Campus 5 specifically) The class will be taught by lecture and discussion method via CANVAS and WebEx. Class materials will include handouts, preparation guidelines, and supplementary materials. Special needs students will receive instruction to accommodate the individual learner's needs.

Honor Code:

(Campus 1 & 5) Mississippi State University has an approved Honor Code that applies to all students. The code is as follows:

"As a Mississippi State University student I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do."

Upon accepting admission to Mississippi State University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor Code. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the MSU community from the requirements or the processes of the Honor Code.

For additional information please visit: <http://www.honorcode.msstate.edu>

(Campus 5 specifically) Online tests will be administered with random ordered questions. All written assignments must be submitted through Turnitin.

Technology:

Students use various application software programs to prepare materials for the course requirements, including papers and projects. They use other technologies in the preparation of their presentation. They also use the Web for research and for posting and retrieving information.

Diversity:

This course will comply with the Mississippi State University diversity policies, and diversity will be addressed in all content.

Accommodations for Students with Disabilities:

Students with disabilities in need of accommodations to meet the expectations of this course are encouraged to bring this need to the attention of the instructor and should register with the Office of Student Support Services as soon as possible. The Office of Student & Disability Support Services is located in 01 Montgomery Hall, (662) 325-3335, and <http://www.sss.msstate.edu/>.

University Safety Statement:

Mississippi State University values the safety of all campus community members. Students are encouraged to register for Maroon Alert texts and to download the Everbridge App. Visit the Personal Information section in Banner on your mystate portal to register. To report suspicious activity or to request a courtesy escort via Safe Walk, call University Police at 662-325-2121, or in case of emergency, call 911. For more information regarding safety and to view available training resources, including helpful videos, visit ready.msstate.edu.

Field Component:

There is no field component in this course.

Evaluation of Student Progress:

- **Student Participation:** Students will attend the class synchronously and asynchronously (e.g., face-to-face or through WebEx and Discussion in Canvas) to share ideas of the subject matter being discussed and learn from each other (Objectives 1- 6).
- **Exams:** Formal written exams will be administered to assess students' knowledge of multimedia learning theories discussed in class (Objective 1-6).
- **Research Paper:** Students will conduct a review of literature and write a research paper on a selected topic of theories of multimedia learning (Objective 1-6).
- **Presentation:** Students will research the related literature and present various multimedia theories in-depth, so students can gain better understanding how to apply design effective multimedia instruction (Objective 1-6).
- **Multimedia Evaluation and Critique:** Students will review various multimedia instruction and critique on their strength and weakness of multimedia designs based on the content discussed in the textbook (Objective 1-6).
- **Multimedia Project:** Students will need to create a multimedia instruction by incorporating the multimedia design principles discussed in class. They will also write a descriptive paper to explain design principle and rationale for the project (Objective 1-6).

Assignments:	Points
Student Participation (10%)	100
Exams (30%)	300
Research Paper (10%)	100
Presentation (10%)	100
Multimedia Evaluation and Critique Project (20%)	200
Final Project: Multimedia Project (20%)	200
Total:	1000

Grading Scale:

Points	Grade
900-1000	A
800-899	B
700-799	C
600-699	D
Below 600	F

Attendance Policy:

(Campus 1 & 5) In accordance with university policy (AOP 12.09), students should attend all classes. When an absence from class is essential, the student must inform the instructor and provide appropriate documentation.

AOP 12.09 (<http://www.policies.msstate.edu/policypdfs/1209.pdf>)

(Campus 5 specifically) Online discussion is required as part of students' class participation, along with online chats, unless students email the instructor ahead for their excused absence of chatting.

Title IX Policy:

MSU is committed to complying with Title IX, a federal policy that prohibits discrimination, including violence and harassment, based on sex. This means that MSU's educational programs and activities must be free from sex discrimination, sexual harassment, and other forms of sexual misconduct. If you or someone you know has experienced sex discrimination, sexual violence and/or harassment by any member of the University community, you are encouraged to report the conduct to MSU's Director of Title IX IIEO Programs at 325-8124 or by e-mail to titleix@msstate.edu. Additional resources are available at <http://www.msstate.edu/web/security/title9-12.pdf>, or at <http://students.msstate.edu/sexualmisconduct/>.

Bibliography:

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