

**GEORGE MASON UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT
INSTRUCTIONAL TECHNOLOGY**

**EDCI 714
Principles of Technology
Spring Semester**

PROFESSOR(S):

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COURSE DESCRIPTION

A. Prerequisites – EDCI 710, EDCI 712

Co-requisite – EDIT 717

- B. Course description from the University Catalog:** This three credit hour course is designed to engage students in a consideration of curriculum design strategies appropriate for the integration of technology. The course will include examples of curriculum design strategies, readings, discussions, and design of lessons or units appropriate to students' various contexts and contents. This course in the sequence will build on previous student learning and focus on technology's role in problem-based learning, problem-centered curriculum design, authentic instruction, and rationales and processes for implementing authentic assessment. Particular emphasis will be placed on the Norton & Wiburg FACTS model of design.

NATURE OF COURSE DELIVERY

The course is structured around readings, reflections on those readings, class projects, and on-line activities. Using this collection of activities, the methodology of the course seeks to build clear bridges between theoretical/research perspectives, effective design principles, and classroom practice.

STUDENT OUTCOMES

This course is designed to enable students to:

1. design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners;
2. apply current research on teaching and learning with technology when planning learning environments and experiences;
3. plan for the management of technology resources within the context of learning activities;
4. plan strategies to manage student learning in a technology-enhanced environment;
5. facilitate technology-enhanced experiences that address content standards and student technology standards;

6. use technology to support learner-centered strategies that address the diverse needs of students;
7. apply technology to demonstrate students' higher order skills and creativity;
8. manage student learning activities in a technology-enhanced environment;
9. use current research and district/region/state/national content and technology standards to build lessons and units of instruction;
10. apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.

PROFESSIONAL STANDARDS (International Society for Technology Education – NETS for Teachers)

1. Technology Operations and Concepts - Teachers demonstrate a sound understanding of technology operations and concepts. Teachers:
 - A. demonstrate introductory knowledge, skills, and understanding of concepts related to technology
 - B. demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies.
2. Planning and Designing Learning Environments and Experiences - Teachers plan and design effective learning environments and experiences supported by technology. Teachers:
 - A. design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners.
 - B. apply current research on teaching and learning with technology when planning learning environments and experiences.
 - C. identify and locate technology resources and evaluate them for accuracy and suitability.
 - D. plan for the management of technology resources within the context of learning activities.
 - E. plan strategies to manage student learning in a technology-enhanced environment.
3. Teaching, Learning, and the Curriculum - Teachers implement curriculum plans, that include methods and strategies for applying technology to maximize student learning. Teachers:
 - A. facilitate technology-enhanced experiences that address content standards and student technology standards.
 - B. use technology to support learner-centered strategies that address the diverse needs of students.
 - C. apply technology to develop students' higher order skills and creativity.
 - D. manage student learning activities in a technology-enhanced environment.
4. Assessment and Evaluation - Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies. Teachers:
 - A. apply technology in assessing student learning of subject matter using a variety of assessment techniques.
 - B. use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.
 - C. apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.
5. Productivity and Professional Practice - Teachers use technology to enhance their productivity and professional practice. Teachers:

- A. use technology resources to engage in ongoing professional development and lifelong learning.
- B. continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.
- C. apply technology to increase productivity.
- D. use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning.

6. Social, Ethical, Legal, and Human Issues - Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and apply those principles in practice. Teachers:

- A. model and teach legal and ethical practice related to technology use.
- B. apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
- C. identify and use technology resources that affirm diversity
- D. promote safe and healthy use of technology resources.
- E. facilitate equitable access to technology resources for all students.

REQUIRED TEXTS:

1. Brooks & Brooks. (1999). *In Search of Understanding*. Alexandria, VA: Association for Supervision & Curriculum Development. (ISBN: 0871203588).
2. Norton, P. & Wiburg, K. (2003). *Teaching With Technology, Second Edition*. Belmont, CA: Wadsworth. (ISBN: 0534603092).

COURSE REQUIREMENTS, PERFORMANCE-BASED ASSESSMENT, AND EVALUATION CRITERIA

A. Requirements –

1. Students will read class readings to include the texts.
2. Online Portfolio: Throughout their program of study, students are required to create and continually revise a professional, online portfolio. This portfolio should not be a collection of what the student has done, but rather a reflection of what they have learned. Templates and assistance will be provided during class to assist students in the creation and maintenance of this portfolio. All exhibits in the online portfolio will include a short reflection. At the end of the semester, a comprehensive, semester-wide reflection and supporting samples of work will be added to the portfolio reflecting student learning related the semester's work.
3. Design Challenges: Students will collaboratively completed 8 design challenges designed to assist the student in the mastery of the FACTS Design Model. These Challenges will result in three comprehensive designs for the students' grade level/subject matter area(s) – one that focuses on environmental issues, one that focuses on a selected content standard(s), and one that focuses on the teaching of ethical issues related to technology. Each of these designs will include comprehensive assessment/evaluation plans.

4. Comprehensive Unit Plans (2): Students will create two unit plans of approximately 2 weeks in length following guidelines established by the FACTS model and integrating standards, technology, and content learning. Second, the unit designs will be accompanied by appropriately designed supplemental materials. Third, the plans will include an assessment/evaluation system and copies of sample tests, rubrics, portfolio guidelines, etc. Finally, the unit plans will be accompanied by an essay that describes why the lesson plan is well designed, making sure to integrate references to concepts presented in this class or in previous classes.
5. Class Participation: The class depends heavily on class participation and completion of in class activities. Points will be awarded for participation and completion of these activities. Three classroom projects will be completed.

B. Performance-Based Assessments - This course includes three performance-based assessments: an online portfolio and two Comprehensive Unit Plans. These are described above in Requirements.

B. Criteria for evaluation - Assessment of each performance assessment is guided by a rubric. The rubrics are as follows:

Portfolio Assessment Rubric

<i>Criteria</i>	Not Present	Present But Needs Improvement	Thoughtfully Presented	Comprehensive and Masterfully Implemented
Portfolio Implementation				
Navigation - Transition to Professional Portfolio				
All links work				
All pages have title and heading				
Web pages demonstrate a clear navigational strategy				
Web pages make use of navigation bars.				
Web pages make use of bookmarks/anchors				
Look and Feel – Transition to Professional Portfolio				
All pages have a background				
All pages use tables to organize page structure.				
Portfolio reflects a web site design rather than a collection of pages with a common look and feel throughout				
Images - Transition to Professional Portfolio				
All images appear				
Web pages use a shared top banner				
Web pages use an original, common background				
Web pages use graphics that express a purpose and add meaning as opposed to being purely decorative				
Grammar and Spelling - Transition to Professional Portfolio				
All pages are grammatically correct				
All pages have been checked for spelling errors				
Personal Learning – Presents artifacts that reflect mastery of tools studied during the semester. Includes evidence that student understands how the tools work, what the tools are useful for, and how the tools are linked to teaching and learning.				

Includes but is not limited to:				
A Research Briefing Paper				
Hypermedia Fairy Tale				
A Subject Matter Hypermedia Project				
Two Comprehensive FACTS Unit Designs				
Implications for Practice (teaching and learning): Presents artifacts that reflect strategies for integrating tools studied with practice, demonstrates use of design strategies taught during the semester. Provides evidence supporting the appropriateness of the lesson design, building bridges between theories/concepts studied and practice. Includes examples of student work representing learning outcomes for K-12 students.				
Includes but is not limited to:				
Implement Two Short-Term Lesson Designs				
Action Research Reflections on Short-Term Two Lesson Designs				
A readings reflection page				
Samples of K-12 student work				
A Hypermedia Lesson Plan				
Reflections/Connections: Presents thoughtful, comprehensive descriptions of what the student has learned, embedded throughout the portfolio. Reflections should express lessons drawn for practice with CLEAR connections to a.) concepts/theories studied, b.) personal teaching and learning goals, and c.) emerging understanding of the art of teaching and learning.				
Addresses the following 4 questions:				
1. Are there personal statements about the impact of activities, concepts, products produced, and readings?				
2. Are there thoughtful comments about how the activities, concepts, products, and readings influence the ways in which the student is coming to think about their practice?				

3. Are there clear explanations with references and embedded links to concepts/theories studied?				
4. Are there clear, embedded links to artifacts that support ideas expressed in the student's reflections?				

C. Grading Scale

Requirements	Percentage
Online Portfolio	20%
Design Challenges	20%
Comprehensive Unit Plans (20% each)	40%
Class Participation	20%

Grade	Point Range
A	94-100
A-	90-93
B+	86-89
B	80-85
C	70-79
F	69-below

COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT STATEMENT OF EXPECTATIONS:

All students must 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.

PROPOSED CLASS SCHEDULE

*Because of the cohort nature of the program, the class schedule reflects the integration of EDCI 714 and EDIT 717, and EDIT 790.

<i>DATE</i>	In Class Activities	Out of Class Assignments
Week 1	Design, Design, Design DEAPR Course Expectations and Relationship of Courses Syllabi, Timelines, Expectations Use your time well!!! A Research Scavenger Hunt A Hypermedia WebQuest Explore, Understand, and Begin	Begin planning and writing first practicum lesson plan ----- Complete research for Hypermedia WebQuest http://mason.gmu.edu/~pnorton/hypermedia/index.htm and take notes in preparation for in class writing of briefing paper. Read Norton/Sprague – Chapter 8 ----- Select and bring to class your favorite children’s story
Week 2	Writing a Briefing Paper Debriefing Contrasting Multimedia and Hypermedia Introduction to Multimedia stories Create and get approval of a multimedia story map Remember the Rule: 100% of a finished design is better than 25% of a brilliant idea ☺ A Few PowerPoint Tricks Implementing a multimedia story map Hypermedia Story Examples	Work on lesson plan and writing of Parts 1 and 2 for first Practicum – DUE to pnorton as an electronic attachment by next class ----- Create a hypermedia story map to turn your multimedia story into a hypermedia story - use Inspiration and send to dhathawa as an attachment two days before Week 3 class
Week 3	Lesson plan and Parts 1 & 2 DUE ----- More PowerPoint Tricks Implement Hypermedia story map. Use the guide and get Signatures. Explore Content-based hypermedia Examples – Using a Rubric	Work on implementation of lesson and evaluation design, collect data and student samples ----- Write a one page design plan for a content-based, hypermedia program you can use with your students Submit your design plan as an attachment to dhathawa three days before Class 4 When design plan is approved, begin creating a map and cards
Week 4	Finish map and cards for your content-based hypermedia program Get approval of your map signed Use the remaining time to work on your design plan and map A Hypermedia Lesson Plan Rubric	Work on implementation of lesson and evaluation design, collect data and student samples ----- Work on hypermedia lesson plan Work on content-based hypermedia project

<p>Week 5</p>	<p>Entire Class dedicated to production of content-based hypermedia project</p>	<p>Complete implementation of lesson and evaluation design, collection of data and student samples and begin narrative – Parts 3 through 8</p> <p>-----</p> <p>Work on hypermedia lesson plan Work on content-based hypermedia project – DUE end of class Week 6</p>
<p>Week 6</p>	<p>Presentation of content-based hyper-media project Introducing Hypermedia and Your Professional Portfolio Examples – Design, Design, Design! DEAPR</p>	<p>Work on write up of the story of your lesson using remaining parts described on the practicum guide provided in the first class – Parts 3 through 8</p> <p>-----</p> <p>Finish hypermedia lesson plan – Due next class</p>
<p>Week 7</p>	<p>Hypermedia Lesson Plan DUE Class dedicated to Professional Portfolio – Design the look and feel, create a map, get approval Begin encoding and assembling</p>	<p>Work on write up of the story of your lesson using remaining parts described on the practicum guide provided in the first class – Parts 3 through 8</p> <p>-----</p> <p>Begin Brooks and Brooks’ <i>In Search of Understanding</i> Begin the Forward, Chapter 1, and Chapter 2 in Norton/Wiburg’s <i>Teaching with Technology</i></p>
<p>Week 8</p>	<p>Class dedicated to Professional Portfolio – Design the look and feel, create a map, get approval Work on encoding and assembling</p>	<p>Finish writing the story of your lesson implementation using the remaining parts described on the practicum guide provided in the first class Create as a web page, upload to portfolio, email address to pnorton – DUE before class Week 9</p> <p>-----</p> <p>Finish Brooks and Brooks’ <i>In Search of Understanding</i> Finish the Forward, Chapter 1, and Chapter 2 in Norton/Wiburg’s <i>Teaching with Technology</i></p>
<p>Week 9</p>	<p>First Practicum Paper DUE</p> <p>-----</p> <p>Time to Share 1st Practicum Top Ten Things . . . Design Challenge 2 A Cacophony of Case Studies</p>	<p>Begin planning and writing second practicum lesson plan</p> <p>-----</p> <p>Think about you classroom curriculum in January and early February. Identify the topic and SOLs related to a unit you expect/want to teach during that time. Bring notes to class. Read Chapter 3 and 4 in Norton/Wiburg’s <i>Teaching with Technology</i></p>

Week 10	Design Challenge 3 Timber Lane Detective Agency Design Challenge 4 A Cacophony of Case Studies Meet the Design Tool – SOLs Analyze for Structure, Process, Discourse	Work on lesson plan and writing of Parts 1 and 2 for second Practicum – DUE to pntonon as an electronic attachment by next class ----- Read Chapter 5 and 6 in Norton/Wiburg’s <i>Teaching with Technology</i>
Week 11	Lesson plan and Parts 1 & 2 DUE ----- Design Challenge 5 A Medieval Feast A Cacophony of Case Studies Design Challenge 6 Perfect Presidential Candidate Back to the Design Tool	Work on implementation of lesson and evaluation design, collect data and student samples ----- Work on implementation of lesson and evaluation design, collect data and student samples ----- Read Chapter 7 and 8 in Norton/Wiburg’s <i>Teaching with Technology</i>
Week 12	Design Challenge 7 A Cacophony of Case Studies Design Challenge 8 A Cacophony of Case Studies Back to the Design Tool	Work on write up of the story of your lesson using remaining parts described on the practicum guide provided in the first class – Parts 3 through 8 ----- Read Chapter 9 and 10 in Norton/Wiburg’s <i>Teaching with Technology</i>
Week 13	Design Challenge 9 A Cacophony of Case Studies Design Challenge 10 A Cacophony of Case Studies Back to the Design Tool	Work on write up of the story of your lesson using remaining parts described on the practicum guide provided in the first class – Parts 3 through 8
Week 14	Time to Work!!!!	Finish writing the story of your lesson implementation using the remaining parts described on the practicum guide provided in the first class Create as a web page, upload to portfolio, email address to pntonon, DUE Week 15
Week 15	Professional Portfolio to date DUE Second Practicum Paper DUE Designs and Evaluation Plan DUE Course Evaluations	Have a GREAT Holiday Break!!!! See you In January ☺