

EDCI 714 – Principles of Technology

(3 credit hours)

1. Course Description

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.

2. Methodology

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.

3. Objectives

The following objectives have been established for the course:

1. Design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners **II.A**;
2. Apply current research on teaching and learning with technology when planning learning environments and experiences **II.B**;
3. Plan for the management of technology resources within the context of learning activities **II.D**;
4. Plan strategies to manage student learning in a technology-enhanced environment **II.E**;
5. Facilitate technology-enhanced experiences that address content standards and student technology standards **III.A**;
6. Use technology to support learner-centered strategies that address the diverse needs of students **III.B**;
7. Apply technology to demonstrate students' higher order skills and creativity **III.C**;
8. Manage student learning activities in a technology-enhanced environment **III.D**;

9. Use current research and district/region/state/national content and technology standards to build lessons and units of instruction **III.E**; and
10. Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity **IV.C**.

4. Texts and Materials

1. Students need to obtain and read:
 - a.) Norton & Wiburg's *Teaching with Technology, 2e* (2003), Wadsworth ISBN 0-534-60309-2;
2. Students are expected to obtain and bring to class appropriate materials and supplies to include 3 ½ " disks and note taking materials.
3. Students must have an email account (GMU provides free to students) and regular, systematic, easy access to both telecommunications and a computer.

5. Course Requirements

1. Attendance in class is mandatory, as discussions, lectures, and hands-on activities are important parts of the course.
2. Each student is expected to complete all readings and participate in all discussions.
3. Each student is expected to participate in and complete all classroom projects.
4. Students who must miss a class are responsible for notifying the instructor (preferably in advance) and for completing any assignments, readings, etc. before the start of the next class.
5. All written assignments must be completed on a word processor. Assignments are to be turned in at the beginning of class on the date due. Late assignments will not be accepted without making prior arrangements with the instructor.

6. Course Assignments

1. Online Portfolio (20 points): 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 **Performance-based outcome for objectives 1 through 10**;
2. Design Challenges (20 points): 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 **Performance-based outcome for objectives 1 through 10;**

3. Comprehensive Unit Plans (20 points each): 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 **Performance-based outcome for objectives 1 through 10;** and
4. Class Participation (20 points): The class depends heavily on class participation and completion of in class activities. Points will be awarded for participation and completion of these activities.

8. Evaluation

Since this is a graduate level course, high quality work is expected on all assignments and in class. Points for all graded assignments (see section 6) will be based on the scope, quality, and creativity of the assignments. All assignments are due at the beginning of class. Late assignments will not be accepted without making arrangements with the instructor.

Points will be assigned to all graded assignments using a rubric process. Both class participants and the course instructor will be involved in assessment of graded assignments. Prior to the due date for any assignment, the class will participate in the development of an assessment rubric. This rubric will result from a discussion of applicable course objectives and an elaboration of qualities and components associated with excellence in completion of the assignment.

When assignments are presented on the designated due date, class participants and the instructor will complete an assessment of the assignment using the rubric created in class. Class participants' ratings on the rubric will be averaged. Then the class participants' average will be averaged with the instructor's ratings on the rubric to compute a final point value for assignments. In this way, the development of the rubric will inform the final completion of the assignments as well as serve as the instrument for assessment and determination of points awarded.

9. Graduate School of Education 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 <http://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.