

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

**EDCI 714
Principles of Technology
Fall 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.

C. Criteria for evaluation - Assessment of each performance assessment is guided by a rubric. The rubrics will be distributed in class.

D. 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.