

# EDIT 715 - Teaching with Technology 3: Publishing and Computational Tools

3 credit hours

\* Coding in **bold** reflects ISTE NETS standards for Educational Computing and Technology Facilitation

## 1. Course Description

This three credit hour course is designed to assist students in exploring and developing expertise with a variety of publishing tools to include word processors, desktop publishers, and idea processors. Emphasis will be placed on using these tools to communicate. Attention will be paid to design and layout principles, the appropriate use of images to facilitate communication, and the ways in which K-12 teachers can design opportunities for students to learn these concepts. In addition, the course will assist students in exploring and developing expertise with a variety of tools commonly used as part of “computational science” and mathematical modeling. These tools will include programming languages such as LOGO, calculators, spreadsheets, probeware, and graphing calculators. The emphasis will be on the ways in which these tools support the K-12 teaching/learning process.

## 2. Methodology

The course is structured around readings, reflections on those readings, class projects, on-line discussions and activities, and participation in a series of model lessons designed to reflect strategies for the integration of technology with the teaching/learning process. Using this collection of activities, the methodology of the course seeks to build clear bridges between technology know how, theoretical/research perspectives, and classroom practice.

## 3. Objectives

The following objectives have been established for the course:

1. Students will develop comprehensive understanding of the mechanics associated with a series of publishing tools; **I-A, I-B**
2. Students will be able to use publishing tools to support their own learning and their professional development; **I-A, I-B, V-A, V-B, V-C, V-D**
3. Students will become familiar with research and curricular and instructional models related to publication and student learning; **II-A, II-B, II-C, II-D, II-E, II-F, III-A, III-B, III-C, III-D, III-E, VI-A, VI-B, VI-C, VI-D, VI-E, VII-C, VIII-C, VIII-E**
4. Students will become familiar with and be able to apply principles of layout and design in publishing environments; **I-A, I-B, II-A, II-B, II-C, II-D, II-E, II-F, III-A, III-B, III-C, III-D, III-E**

5. Students will design at least one lesson for their grade and/or subject matter interests using publishing tools and design and layout principles; **II-A, II-B, II-C, II-D, II-E, IV-A, IV-B, IV-C, VI-A, VI-B, VI-C, VI-D, VI-E, VII-C, VIII-C, VIII-E**
6. Students will develop understanding of the mechanics associated with a series of computational tools including calculators, spreadsheets, graphing calculators, and programming languages; **I-A, I-B**
7. Students will become familiar with research and curricular and instructional models related to the use of computational tools to support student learning. **II-A, II-B, II-C, II-D, II-E, II-F, III-A, III-B, III-C, III-D, III-E, VI-A, VI-B, VI-C, VI-D, VI-E, VII-C, VIII-C, VIII-E**

#### 4. Texts and Materials

1. Students need to obtain and read:
  - a.) Robin William's *The Non-Designers Design Book* (1994), ISBN: 1566091594
  - b.) Chapter 4 and Chapter 9 in Norton & Sprague's *Technology for Teaching* (2000), ISBN: 0205309151
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 on-line 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 (25 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 2, 3, 5, & 7.**

2. Publishing Lesson Plan – DTP and Web (20 points): Students will create a lesson plan which includes some aspect or aspects of desktop publishing as part of the overall design. The lesson plan will be accompanied by an essay which describes why the lesson plan is well designed, making sure to integrate references to concepts presented in class or in the readings. This lesson plan and essay are due Week Eight at the beginning of class. **Performance-based outcome for objectives 3 & 5.**
3. Published Documents (10 points): Students, either individually or with partners, will prepare a published document – DTP and Web - for their own students' use related to a content or skill in their teaching area as well as at least one document for their professional use. The documents will reflect the application of design and layout principles as well as effective use of desktop publishing tools. **Performance-based outcome for objectives 1, 2 & 4.**
4. Class Participation (25 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.

## 7. 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](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](http://www.gmu.edu/student/drc) or call 703-993-2474 to access the DRC.