

## "Folio-ette"

### **Educational Technology Education Department Loyola College in Maryland**

**January 2002**

#### **Mission Statement**

Technology is playing an increasing role in our schools. Schools and districts are spending millions of dollars on technology, and leadership is needed to ensure that this investment is used to benefit education. Technology leaders must be masters of the change process as well as experts in the technology. The program integrates hands-on applications of educational technology with practical and theoretical perspectives of change, school reform, staff development, and ethical considerations of technology in the schools. Methods of infusing technology into the teaching and learning process will be modeled throughout the program. This program is geared toward those wishing to become technology specialists or technology leaders on the school, district and national levels.

#### **Professional Standards**

The Educational Technology program is an advanced program that does not offer initial certification. In the State of Maryland, there is no certification for Educational Technology. This program is aligned with the International Society for Technology in Education (ISTE) standards for "Advanced Preparation of Teachers of Educational Computing and Technology Leadership" (<http://www.ncate.org/standard/new%20program%20standards/iste%202001.pdf>).

#### **Faculty**

Name	Title	Program Courses Taught
David M. Marcovitz, Ph.D.	Coordinator of Graduate Programs in Educational Technology Assistant Professor	ET605 Introduction to Educational Technology ET620 Multimedia Design in the Classroom ET630 Telecommunications in the Classroom ET680 The Role of the Technology Specialist ET690 Educational Technology Seminar ET691 Educational Technology Internship
Ilysia Debby Deal, Ph.D.	Assistant Professor	ED600 Foundations of Educational Research ED608 Educational Innovations

Sam Polack, M.Ed.	Instructor	ET605 Introduction to Educational Technology ET610 Curricular Applications of Technology
Celeste Smith, M.S.	Instructor	ET631 Distance Education
Pat Ourand, M.S.	Instructor	ET640 Adaptive/Assistive Technology for Education

Note that ED600 and AD662 are required courses in the Educational Technology program as well as other Education Department programs. These classes are taught by several different Education Department Faculty members.

### **Requirements for the Major**

M.Ed. students are required to complete 36 credits. M.A. students are required to complete 39 credits. The difference in the programs is that M.Ed. students are required to complete ET691 Educational Technology Internship for 3 credits while M.A. students are required to complete ET699 Educational Technology Thesis for 6 credits.

<b>Departmental Core Classes</b>		
ED 600	Foundations of Educational Research	3 credits
Examines various approaches to research in education, including historical/experimental methods, the survey, case study, and philosophical inquiry. Focuses on quantitative and qualitative methodology. Encourages students to develop a basis for evaluating and understanding research in the field and to familiarize themselves with the literature in their chosen areas of concentration. Acquisition of state-of-the-art information searching and accessing strategies is an integral part of the course objectives.		
ED 608	Educational Innovations	3 credits
Examines innovation in schools, including the philosophical and psychological assumptions that underlie departures from traditional schooling. Provides an historical perspective to understand how current and future innovations can impact the educational process.		
AD 662	Supervision and Staff Development	3 credits
Examines the impact of the school reform movement on the principles and practices of supervision and staff development. Special attention paid to the role of the contemporary leader and principal, as well as the study of supervision as a process to stimulate professional growth/development throughout the teacher career cycle.		
<b>Educational Technology Core Classes</b>		
ET 605	Introduction to Educational Technology	3 credits
Examines applications of traditional and emerging technology to the curriculum with an emphasis on uses of technology as instructional tools to enhance the quality of classroom instruction and facilitate the work of the teacher. Includes hands-on experience with a variety of technology as well as discussions of the place of technology in school reform. This laboratory-based course provides hands-on computer experience in class and requires extensive computer work outside of class.		
ET 610	Curricular Applications of Technology	3 credits
Studies applications of technology to the curriculum in a variety of disciplines. Software and technology projects to enhance science, mathematics, social studies, and language arts are reviewed. Criteria for evaluating software and technology projects are discussed, and technological resources in each curricular area are presented.		

ET 620	Multimedia Design in the Classroom	3 credits
Prerequisite: ET 605 or permission of instructor. An introduction to design, development, and evaluation of multimedia projects with an emphasis on multimedia production in the K-12 classroom. Students will use multimedia authoring tools to produce courseware for classroom use and learn how to incorporate multimedia design projects into their curricula. Emphasis is on using multimedia design to teach K-12 students to be critical consumers of information. This laboratory-based course provides hands-on computer experience in class and requires extensive computer work outside of class.		
ET 630	Telecommunications in the Classroom	3 credits
Prerequisite: ET 605 or permission of instructor. Examines technical and curricular aspects of telecommunications in schools. Introduces telecommunications software and hardware, such as world wide web browsers and servers, electronic mail systems, networks, and modems. Explores curricular implications of telecommunications and internetworking, such as networked projects with students and adults outside the school walls, research on the Internet, authentic publishing on the world wide web, and critical information literacy.		
ET 631	Distance Education	3 credits
Prerequisite: ET 605 or permission of instructor. This course will provide an introduction to the different methods of delivering instruction at a distance, including asynchronous learning networks and two-way interactive video. It will discuss the pedagogical obstacles that distance imposes and why educators might or might not choose to teach at a distance. This course will provide hands-on practical experience with designing instruction for use over the Internet and in Loyola's state-of-the-art distance learning classroom.		
ET 640	Adaptive/Assistive Technology for Education	3 credits
Examines adaptive/assistive technologies for helping special needs students in the classroom.		
ET 680	The Role of the Technology Specialist	3 credits
Prerequisite: ET 605 or permission of instructor. This course analyzes the role of the technology specialist in the school, including practical issues for managing the school's technology infrastructure, balancing a teaching load with technology specialist responsibilities, and the technology specialist as a catalyst for change.		
ET 690	Educational Technology Seminar	3 credits
Prerequisite: ET 605 and ED 600 or permission of instructor. This course examines current trends in the field of educational technology.		
<b>Internship (for M.Ed. option)</b>		
ET 691	Educational Technology Internship	3 credits
Prerequisite: Completion of 24 credits and written permission of the adviser are required. Offered on an individual basis or in groups. Participants may earn graduate credit for experiences with educational technology on the school, district, or state level, at the discretion of the College. At meetings with the department coordinator, assigned readings in specific areas of educational technology are discussed to provide some theory for the educational technology practice in which individual participants engage. Students who are interested in obtaining internship credit may contact the adviser at any time.		

<b>Thesis (for M.A. option)</b>		
ET 699	Thesis Seminar	6 credits
Students planning to propose a thesis topic enroll with their adviser's consent. Informal meetings, scheduled at the convenience of participants and advisers, provide an opportunity for critical discussion of planned research. Participants receive credit upon successful completion of their thesis.		

Note that ET681 is listed in many places as being part of the program, but it is not currently offered.

**Matrix for Content Standards**

<b>1.0 Prerequisite Preparation—Foundations.</b> Professional studies culminating in the educational computing and technology literacy endorsement prepare candidates to use computers and related technologies in educational settings. All candidates seeking initial certification or endorsements in teacher preparation programs should have opportunities to meet the educational technology foundations standards.	
<b>1.1 Basic Computer/Technology Operations and Concepts.</b> Candidates will use computer systems-run software; to access, generate, and manipulate data; and to publish results. They will also evaluate performance of hardware and software components of computer systems and apply basic troubleshooting strategies as needed.	
1.1.1 operate a multimedia computer system with related peripheral devices to successfully install and use a variety of software package.	ET605
1.1.2 use terminology related to computers and technology appropriately in written and oral communications.	ET605
1.1.3 describe and implement basic troubleshooting techniques for multimedia computer systems with related peripheral devices.	ET605
1.1.4 use imaging devices such as scanners, digital cameras, and/or video cameras with computer systems and software.	ET605, ET620
1.1.5 demonstrate knowledge of uses of computers and technology in business, industry, and society.	ET605
<b>1.2 Personal and Professional Use of Technology.</b> Candidates will apply tools for enhancing their own professional growth and productivity. They will use technology in communicating, collaborating, conducting research, and solving problems. In addition, they will plan and participate in activities that encourage lifelong learning and will promote equitable, ethical, and legal use of computer/technology resources.	
1.2.1 use productivity tools for word processing, database management, and spreadsheet applications.	ET605
1.2.2 apply productivity tools for creating multimedia presentations.	ET605, ET620
1.2.3 use computer-based technologies including telecommunications to access information and enhance personal and professional productivity.	ET605, ET630
1.2.4 use computers to support problem solving, data collection, information management, communications, presentations, and decision making.	ET605, ET680
1.2.5 demonstrate awareness of resources for adaptive assistive devices for student with special needs.	ET640

<b>1.2.6</b> demonstrate knowledge of equity, ethics, legal, and human issues concerning use of computers and technology.	ET605, ET640, ET690
<b>1.2.7</b> identify computer and related technology resources for facilitating lifelong learning and emerging roles of the learner and the educator.	ET605, ET610, ET620, ET630, ET631, ET640, ET680, ET690, ED600
<b>1.2.8</b> observe demonstrations or uses of broadcast instruction, audio/video conferencing, and other distant learning applications.	ET605, ET630, ET631
<p><b>1.3 Application of Technology in Instruction.</b> Candidates will apply computers and related technologies to support instruction in their grade level and subject areas. They must plan and deliver instructional units that integrate a variety of software, applications, and learning tools. Lessons developed must reflect effective grouping and assessment strategies for diverse populations.</p>	
<b>1.3.1</b> explore, evaluate, and use computer/technology resources including applications, tools, educational software and associated documentation.	ET605
<b>1.3.2</b> describe current instructional principles, research, and appropriate assessment practices as related to the use of computers and technology resources in the curriculum.	ET610
<b>1.3.3</b> design, deliver, and assess student learning activities that integrate computers and other technology for a variety of student grouping strategies and for diverse student populations.	ET605, ET610, ET620
<b>1.3.4</b> design student learning activities that foster equitable, ethical, and legal use of technology by students.	ET605, ET610, ET620, ET6800, ET690
<b>1.3.5</b> practice responsible, ethical and legal use of technology, information, and software resources.	ET05, ET610, ET620, ET680, ET690
<p><b>2.0 Specialty Content Preparation in Educational Computing and Technology Literacy.</b> Professional studies in educational computing and technology provide concepts and skills that prepare teachers to teach computer/technology applications and use technology to support other content areas.</p>	
<p><b>2.1 Social, Ethical, and Human Issues.</b> Candidates will apply concepts and skills in making decisions concerning social, ethical, and human issues related to computing and technology.</p>	
<b>2.1.1</b> describe the historical development and important trends affecting the evolution of technology and its probable future roles in society.	ET605, ET690, ED608

2.1.2 describe strategies for facilitating consideration of ethical, legal, and human issues involving school purchasing and policy decisions.	ET620, ET680
<b>2.2 Productivity Tools.</b>	
Candidates integrate advanced features of technology-based productivity tools to support instruction.	
2.2.1 use advanced features of word processing, desktop publishing, graphics programs and utilities to develop professional products.	ET605
2.2.2 use spreadsheets for analyzing, organizing and displaying numeric data graphically.	ET605
2.2.3 design and manipulate databases and generate customized reports.	ET605
2.2.4 use teacher utility and classroom management tools to design solutions for a specific purpose.	ET605
2.2.5 identify, select, and integrate video and digital images in varying formats for use in presentations, publications and/or other products.	ET620, ET630
2.2.6 apply specific-purpose electronic devices (such as, a graphing calculator, language translator, scientific probeware, or electronic thesaurus) in appropriate content areas.	ET610
2.2.7 use features of applications that integrate word processing, database, spreadsheet, communication, and other tools.	ET605
<b>2.3 Telecommunications and Information Access.</b>	
Candidates will use telecommunications and information access resources to support instruction.	
2.3.1 access and use telecommunications tools and resources for information sharing, remote information access and retrieval, and multimedia/hypermedia publishing.	ET605, ET620, ET630
2.3.2 use electronic mail and Web browser applications for communications and for research to support instruction.	ET605, ET630, ED600
2.3.3 use automated online search tools and intelligent agents to identify and index desired information resources.	ET605, ET630, ED600
<b>2.4 Research, Problem Solving, and Product Development.</b>	
Candidates will use computers and other technologies in research, problem solving, and product development. Candidates use a variety of media, presentation, and authoring packages; plan and participate in team and collaborative projects that require critical analysis and evaluation; and present products developed.	
2.4.1 identify basic principles of instructional design associated with the development of multimedia and hypermedia learning materials.	ET620
2.4.2 develop simple hypermedia and multimedia products that apply basic instructional design principles.	ET620

2.4.3 select appropriate tools for communicating concepts, conducting research, and solving problems for an intended audience and purpose.	ET620
2.4.4 participate in collaborative projects and team activities.	ET605, ET610, ET620, ET630, ET631, ET680, ET690
2.4.5 identify examples of emerging programming, authoring, or problem solving environments.	ET620
2.4.6 collaborate in online workgroups to build bodies of knowledge around specific topics.	ET605, ET610, ET620, ET630, ET631, ET680, ET690
2.4.7 use a computer projection device to support and deliver oral presentations.	ET605
2.4.8 design and publish simple online documents that present information and include links to critical resources.	ET605, ET630
2.4.9 develop instructional units that involve compiling, organizing, analyzing, and synthesizing of information and use technology to support these processes.	ET605, ET610
2.4.10 conduct research and evaluate online sources of information that support and enhance the curriculum.	ET605, ET630
<b>3.0 Professional Preparation.</b> Professional preparation in educational computing and technology literacy prepares candidates to integrate teaching methodologies with knowledge about use of technology to support teaching and learning.	
<b>3.1 Teaching Methodology.</b> Candidates will effectively plan, deliver, and assess concepts and skills relevant to educational computing and technology literacy across the curriculum.	
3.1.1 design and practice methods and strategies for teaching concepts and skills related to computers and related technologies including keyboarding.	ET605
3.1.2 design and practice methods and strategies for teaching concepts and skills for applying productivity tools.	ET605
3.1.3 design and practice methods/strategies for teaching concepts and skills for applying information access and delivery tools.	ET605, ET620, ET630
3.1.4 design and practice methods and strategies for teaching problem-solving principles and skills using technology resources.	ET605, ET630

<b>3.1.5</b> observe in a K–12 setting where K–12 computer technology concepts and skills are being taught.	ET691
<b>3.1.6</b> practice methods and strategies for teaching technology concepts and skills in a lab and classroom setting.	ET691
<b>3.1.7</b> identify and support implementation and revision of computer or other technology literacy curriculum to reflect ongoing changes in technology.	ET605, ET610, ET680
<b>3.1.8</b> design and implement integrated technology classroom activities that involve teaming or small group collaboration.	ET620
<b>3.1.9</b> identify activities and resources to support regular professional growth related to technology.	ET680, AD662
<b>3.1.10</b> describe student guidance resources, career awareness resources, and student support activities related to computing and technology.	
<b>3.1.11</b> compare national K–12 computer or other technology standards with benchmarks set by local school districts and critique each.	ET610, ET680
<b>3.1.12</b> identify professional organizations and groups that support the field of educational computing and technology.	ET680
<b>3.1.13</b> design a set of evaluation strategies and methods that will assess the effectiveness of instructional units that integrate computers/technology.	ET620
<b>3.2 Hardware and Software Selection, Installation, and Maintenance.</b>	
Candidates will demonstrate knowledge of selection, installation, management, and maintenance of the infrastructure in a classroom setting.	
<b>3.2.1</b> develop plans to configure computer or other technology systems and related peripherals in laboratory, classroom cluster, and other appropriate instructional arrangements.	ET680
<b>3.2.2</b> identify and describe strategies to support development of school and laboratory policies, procedures, and practices related to use of computers or other technology.	ET605, ET680
<b>3.2.3</b> research, evaluate, and develop recommendations for purchasing instructional software to support and enhance the school curriculum.	ET605, ET610, ET680
<b>3.2.4</b> research, evaluate, and develop recommendations for purchasing technology systems.	ET680
<b>3.2.5</b> design and recommend procedures for the organization, management, and security of hardware and software.	ET680
<b>3.2.6</b> identify strategies for troubleshooting and maintaining various hardware and software configurations.	ET680
<b>3.2.7</b> identify and describe network software packages used to operate a computer network system.	ET630, ET631, ET680

3.2.8 configure a computer system and one or more software packages.	
<b>4.0 Specialty Content Preparation for Educational Computing and Technology Leadership.</b> Professional studies in educational computing and technology leadership prepare candidates to exhibit leadership in the identification, selection, installation, maintenance, and management of computing hardware and software and the uses of computers and related technologies throughout the curriculum.	
<b>4.1 Research and Theories.</b> Candidates will identify and apply educational and technology-related research, the psychology of learning, and instructional design principles in guiding use of computers and technology in education.	
4.1.1 summarize and apply principles and practices of educational research in educational technology.	ET690, ED600
4.1.2 summarize major research findings and trends related to the use of technology in education to support integration of technology in a K–12 environment.	ET690, ED600
4.1.3 apply theories of learning, teaching, and instructional design and their relationship to the use of technology to support learning.	ET610, ET620, ED600
4.1.4 describe social and historical foundations of education and how they relate to the use of technology in schools.	ET690, ED608
4.1.5 identify research related to human and equity issues concerning the use of computers and related technologies in education.	ET640, ET690
4.1.6 design a research project that includes evaluating the use of a specific technology in a K–12 environment.	ET691, ET699
<b>4.2 Instructional Design and Product Development.</b> Candidates will evaluate authoring and programming environments for use in the classroom. They will apply instructional design principles to develop, implement, and test interactive multimedia instructional products using authoring environments.	
4.2.1 use and apply more than one computer authoring and/or programming environment.	ET620
4.2.2 describe the characteristics and uses of current authoring environments and evaluate their appropriateness for classroom applications.	ET620
4.2.3 describe the characteristics and uses of current programming and scripting environments and evaluate their appropriateness for classroom use.	ET620
4.2.4 apply instructional design principles to the design of screens, text, graphics, audio, and video in instructional products under development.	ET620
4.2.5 describe and practice strategies for testing and evaluating instructional products designed.	ET620
4.2.6 apply instructional design principles to develop substantive interactive multimedia computer-based instructional products.	ET620

<b>4.3 Information Access and Delivery.</b> Candidates will implement information access and delivery resources in K–12 schools to support the curriculum.	
4.3.1 identify and use information access and telecommunication tools to support research and instruction throughout the curriculum.	ET630, ET631, ED600
4.3.2 use and implement distance learning delivery systems including computer, audio, and video conferencing.	ET631
4.3.3 create multimedia presentations using advanced features of a presentation tool and deliver them using computer projection systems.	ET620, ET631
4.3.4 install, configure, and use local mass storage devices and media to store and retrieve information and resources.	
4.3.5 describe issues related to selecting, installing, and maintaining WANs for school districts.	ET630, ET680
<b>4.4 Operating Systems.</b> Candidates will install, customize, and configure the operating systems of computers and computer networks in school settings.	
4.4.1 identify and describe the major operating systems associated with computing platforms found in K–12 schools.	ET605
4.4.2 identify and manipulate preferences, defaults, and other selectable features of operating systems commonly found in K–12 schools.	ET605
4.4.3 use and manipulate networking software to effectively manage the operation of a LAN.	
4.4.4 evaluate, troubleshoot, install, and maintain computer operating systems for classrooms and laboratories.	
<b>4.5 Software and Hardware Selection, Installation, and Maintenance.</b> Candidates will identify and implement software in both classroom and administrative environments. They will investigate issues related to school and site planning, purchasing, and technology integration.	
4.5.1 identify and describe software used in classroom and administrative settings including productivity tools, information access telecommunications tools, multimedia, hypermedia tools, school management tools, evaluation and portfolio tools, and computer-based instruction.	ET605, ET610, ET620, ET630, ET680
4.5.2 investigate and recommend purchasing strategies and procedures for acquiring administrative and instructional software for educational settings.	ET610, ET680
4.5.3 describe evaluation criteria for software and identify reliable sources of software evaluations.	ET610, ET680
4.5.4 identify and implement methods of installation, maintenance, inventory, and management of software libraries.	ET680
4.5.5 develop and implement ethical and legal procedures for maintaining software libraries.	ET680

<b>4.5.6</b> identify and classify adaptive assistive hardware and software for students and teachers with special needs and locate sources to assist in procurement and implementation.	ET640
<b>5.0 Professional Preparation in Educational Computing and Technology Leadership.</b> Professional studies in educational computing and technology combine leadership skills and concepts with knowledge about use of computers and related technologies in schools. Advanced programs preparing educators for a specialty in educational computing and technology require studies of and experiences with leadership, staff development, and supervisory concepts and skills as they relate to use of technology-based systems in K–12 education.	
<b>5.1 Instructional Program Development.</b> Candidates will develop curricular plans based on local, state, and national standards for the use of computers and other associated technologies.	
<b>5.1.1</b> describe and analyze accepted principles of strategic planning to facilitate curriculum design for teaching with computers and related technologies.	ET680
<b>5.1.2</b> identify and use national, state, and local guidelines to develop curriculum plans for integrating technology in the K–12 environment.	ET680
<b>5.2 Teaching Methodology.</b> Candidates will apply effective methods and strategies for teaching the use of technology tools.	
<b>5.2.1</b> demonstrate methods for teaching hypermedia development, scripting, and/or computer programming in a problem solving context in K–12 schools.	ET620
<b>5.2.2</b> demonstrate methods for teaching at least one modern authoring tool to colleagues and students.	ET620
<b>5.2.3</b> demonstrate methods for teaching uses of media-based tools such as television, audio, print media, and graphics.	ET620
<b>5.2.4</b> demonstrate methods for teaching social, ethical, and legal issues and responsible use of technology.	ET620
<b>5.3 Staff development.</b> Candidates will demonstrate knowledge of issues and models related to leadership in staff development. Candidates will plan and design staff development activities for educational settings.	
<b>5.3.1</b> plan and design staff development programs.	AD682
<b>5.3.2</b> describe and identify resources for staff development.	AD682
<b>5.3.3</b> plan and customize staff development based on differing audiences including school and district decision makers.	AD682
<b>5.4 Facilities and Resource Management.</b> Candidates will demonstrate knowledge of issues related to facilities and resource management.	

<b>5.4.1</b> describe and use budget planning and management procedures related to educational computing and technology facilities and resources.	ET680
<b>5.4.2</b> identify funding sources available at local, state, or national levels and collaborate on development of a grant proposal.	ET680
<b>5.4.3</b> plan, develop, implement, and evaluate strategies and procedures for resource acquisition and management of technology-based systems including hardware and software.	ET680
<b>5.4.4</b> identify, describe, and analyze procedures related to basic trouble shooting, preventive maintenance, and procurement of system-wide maintenance services.	ET680
<b>5.4.5</b> describe and maintain current information involving facilities planning issues related to computers and related technologies.	ET680
<b>5.4.6</b> design and develop policies and procedures concerning staffing, scheduling, and security for managing computers and technology in a variety of instructional and administrative school settings.	ET680
<b>5.5 Managing the Change Process.</b>	
Candidate will demonstrate knowledge of strategies for and issues related to managing the change process in schools.	
<b>5.5.1</b> evaluate school and district technology plans and recommend improvements.	ET680
<b>5.5.2</b> discuss issues relating to building collaborations, alliances, and partnerships involving educational technology initiatives.	ET680
<b>5.5.3</b> demonstrate knowledge of effective group process skills.	ET680
<b>5.5.4</b> use evaluation findings to recommend modifications in technology implementations.	ET680
<b>5.6 Field Experiences.</b>	
Candidates will participate in field experiences that allow them to (1) observe the use of technology to support instruction, the management of technology resources in educational settings, and the evaluation of effectiveness of technology resources for teaching and learning; and (2) apply technology resources to support instruction in classroom settings.	
<b>5.6.1</b> observe and compare methods and strategies used in educational technology in a variety of authentic educational settings (e.g., elementary, middle, secondary, adaptive assistive classrooms, labs).	ET691
<b>5.6.2</b> develop and teach a series of lessons that apply technology resources to support instruction.	ET610, ET691
<b>5.6.3</b> document and assess a significant field-based activity involving experiences in instructional program development, staff development, facilities and resource management, or managing change related to technology use in schools.	ET691
<b>5.6.4</b> document and assess experiences in implementing a WAN or LAN with Internet connectivity.	ET691