UNIVERSITY OF MARYLAND

EDUC 477:
Assistive Technology/Universal Design for the General Classroom Settings

SYLLABUS

Instructor:	Davina Pruitt-Mentle
Office:	2127 Tawes
Phone:	301-405-8202
Email:	dp151@umail.umd.edu
Website:	www.edtechoutreach.umd.edu
Office Hours:	By appointment
Credits:	3 credit

Catalogue Description:

This course is designed to be an introductory survey course for educators in the application of assistive technology/universal design in the **general classroom** setting. Students will be introduced to various assistive technologies and strategies.

Course Description:

COMAR regulations have changed to ensure that all students have equivalent access to computer-based instructional technology. Revisions align with Section 508 of the Federal Rehabilitation Act, "Electronic and Information Technology Accessibility Standards", and impact educators at all levels. The new Maryland teacher and administrator technology standards require ALL educators to have a more fluent understanding of assistive technology (AT) options and possibilities. This course is designed to be an introductory survey course for educators in the application of assistive technology/universal design in the **general classroom setting** to help schools comply with the new requirements. Students will learn about the continuum of AT devices, universal design for learning, curriculum adaptation and integration strategies, and assessment and evaluation protocols. Additional discussions will include action plan development related to systemic implementation strategies for supporting the use and integration of assistive technologies in the school setting.

Course Rationale:

The Individuals with Disabilities Education Act (IDEA), as reauthorized, promotes and serves to insure that all students with disabilities will be provided access to an appropriate curriculum in the least restrictive environment (LRE). This mandate necessitates that **regular and special educators** become familiar with multiple solutions necessary for educating students regardless of disability. The state of technology as we enter the new millennium allows for "easy access" in a "user-friendly" environment. This course is specifically designed to support the goal of preparing thoughtful and responsive educators who

can take on the unique challenges inherent in the diversity of today's classrooms. To ensure a free and appropriate education for all students, teachers must enter the classroom equipped with the content knowledge, diverse instructional strategies, technology integration skills, and knowledge of assessment and evaluation protocols. **This course will help amplify a teacher's skills in these areas by adding the additional knowledge of AT devices, Universal Design, curriculum adaptation and integration strategies, and assessment and evaluation protocols for ALL students in the general classroom setting.**

Course Goal:

Introduce educators to a wide range of applications and strategies of assistive technology/universal design in the **general classroom** setting to help educators meet the Maryland Teacher Technology Standards and to help schools comply with the new requirements.

Course Objectives:

At the completion of this module, students will:

1. Review legislative policies and mandates that led to all educators becoming familiar with AT options,
2. Review research on effective AT-enhanced instruction in the **general classroom**,
3. Become familiar with different technologies and strategies available to meet the mandates designed by IDEA (The Individuals with Disabilities Education Act-IDEA '97, Section 504 of the Rehabilitation Act of 1973, Americans with Disabilities Act (ADA) and Maryland COMAR regulations that support student access to and progress in the **general curriculum**. To include:
    - discuss the use of "no tech" and "low tech" accommodations to address the needs of students with disabilities;
    - demonstrate how a computerized graphic organizer can assist students with learning disabilities;
    - use software to develop an IEP (Individualized Education Plan) and exchange information with another professional so that appropriate assistive technology is identified;
    - use a modified keyboard;
    - explore the use of portable keyboards and word processors as assistive technology devices;
    - demonstrate the use of Personal Communication Symbols (PCS) in a variety of instructional situations;
    - explore the use of various software to develop an IEP (Individualized Education Plan) that includes modifications which are based on the student's strength's and needs;
    - explore the use of adaptive keyboards to interact with instructionally appropriate multimedia software;
    - review augmentative and alternative communication (AAC) through the development of multi-level environments;
    - utilize auditory and visual scanning in choice making with the use of (an) adaptive switch(s);
4. Identify national and local organizations and services associated with assistive technology.
5. Utilize state and national content and technology standards in designing technology-enhanced instruction and school technology plans,
6. Evaluate AT software applications for enhancing instruction and school administration,
7. Discuss **universal design principles** in the context of general education environments and curriculum materials,
8. Explore the process for finding the right technology and the right applications, and determine how to pay for it,

9. Explore and discuss how to establish a technology team with an assistive technology representative, perform a school wide assessment of all student needs and develop a school and/or classroom tech plan,
10. Review and discuss assistive technology-enhanced options and materials for culturally diverse populations,
11. Review and discuss equity, ethical and legal issues in using technology in schools,
12. Share knowledge of important issues and trends related to assistive technology-enhanced content through online collaborative group discussions and reflect upon student experiences in a Web enhanced/Web-based course.

Readings:
Recommended readings are included in this syllabus. **Others** can be found at www.edtechoutreach.umd.edu and within a WebCT supplement.

Texts:
Required:

- Full Text Found Online
  - David H. Rose & Anne Meyer. Teaching Every Student in the Digital Age: Universal Design for Learning. ASCD, 2002. Full text online at: http://www.cast.org/teachingeverystudent/ideas/tes/
  - How People Learn: Brain, Mind, Experience and School. http://www.nap.edu/books/0309070368/html/

Methodology:

This course will utilize a combination of face to face and on-line lecture and reading materials, hands-on experiences, discussions, guest speakers, group work and projects to help participants understand effective strategies for utilizing data and data analysis with technology tools to help guide instructional decisions for their classroom.

Student Expectations and Procedures:

1. Students are expected to obtain and actively use a computer account with access to the Internet and WebCT discussion site (the University provides such accounts free to enrolled students.) Students are expected to use **anti-virus software and backup all work**. Since the course will sometimes meet on-line it is of importance that you assure that your computer access can easily support the WebCT environment. WebCT Student Manual - http://www.courses.umd.edu/studentmanual/

2. Completion of assigned tasks and readings **prior to each class** is required in order to facilitate student learning.

3. It is expected that students will initiate, participate in and facilitate (both in class and on-line) discussions on course topics, issues and readings. Please see the on-line discussion grading rubric.

4. **If you have a documented disability and wish to discuss academic accommodations please contact me as soon as possible.**

5. Students missing the deadline for an assignment must make immediate arrangements with the instructor to fulfill that requirement before the next class session.

6. Please carefully edit all written assignments. A lack of care in proofreading or composition can negatively affect your final grade.

7. The citation style employed should be accurate, acceptable, and recognizable (MLA, Chicago or APA) practice. The American Psychological Association (APA: http://www.apa.org) style of citation is preferred. For quick basics, visit:
    - UMCP reference site http://www.lib.umd.edu/UES/library_guides.html
    - Purdue Owl Lab http://owl.english.purdue.edu/workshops/hypertext/APA/index.html
    - Columbia University Press - http://www.columbia.edu/cu/cup/cgos/idx_basic.html
    - Columbia Guide to Online Style/ACW style "help sheets"- http://www.cas.usf.edu/english/walker/mla.html
8. The University of Maryland has developed a policy describing appropriate academic conduct. Turning in assignments that use substantial portions of the work of others without attribution is considered plagiarizing and is specifically prohibited. Please review information regarding the Honor Code and other academic integrity policies at: http://www.jpo.umd.edu/aca/FAQ.html

Instructor Responsibilities

Just as we have high expectations for students, we also have high expectations for ourselves. Students should expect that the instructor for this course will:

1. Be prepared for class, read and return students' work in a timely manner, and be interested and engaged in students' work;

2. Remember that each student brings different background knowledge about both content and online experiences to this course, as well as help students develop their personal interests whenever possible;

3. Help students identify sources of additional substantive and methodological expertise, as needed;

4. Meet with students individually or in groups upon request and be available in person, by telephone, and by email to answer questions; and

5. Work hard, have fun and empower students to plan and engage in high quality discussions and experiences.

6. Email with students is not always a low threshold technology. Students sometimes feel that faculty/instructors should be available to answer questions 24/7 or whenever the student is online. This expectation of an immediate response can occasionally create a negative communication environment. Students' emails can also add significantly to faculty/instructor workload. While my past performance has indicated that I return emails promptly (sometimes to students surprise within minutes), in order to eliminate the possibility of problems due to assumptions, the following is the course minimal guideline: All emails will be answered within 24 hours of receipt except on weekends (begins after 4:00 on Friday)-which may take longer. I do however; HIGHLY recommend that you send emails whenever a question arises, while the above is only a statement of minimal expectations on my part.

Grading Policy and Rubrics:

Grades will be based on the content, clarity of writing and creativity of work in assignments completed for this course. The extent and quality of participation in course discussions (face to face and virtual) will also

be evaluated in determining the final grade. The relative portion of the grade assigned to each course component will include:

a. In-class and online discussions and mini-activities **(40%)**
b. IEP Exercise/Lesson Plan **(20%)**
c. Paper/Project [Description - Word ... PDF] **(20%)**
d. Final Reflection Journal/Paper/Project-- reflecting on your own ideas and practices as well as on those introduced in this course. E.g., A reflection paper that capstones course activities. [Description - Word ... PDF] **(20%)**
e. Examples of Final Projects
    a. E-Portfolio 1
    b. E-Portfolio 2
    c. Paper - Learning Never Ends: A Reflection of Learning to Shape the Future [RTF ... PDF]

All deadlines will be detailed in the course outline.

The evaluation criteria for this course are described in more detail in the grading rubric.

The grading rubric describes participant performance expectations and efforts most valued. Professionalism, completeness, timeliness and quality are all considered in the evaluation process.

Educational Technology Outreach Grading Rubric

Letter Grade	Extent, Quality and Creativity of Work	Completeness of Work	Timelessness of work	Participation in discussions
A+	Exceptional Quality and insight; honors spirit of task; a rare and valuable contribution to understanding	100% complete (or beyond); a model for others to follow; honors spirit of task	100% on time	insightful, thoughtful and stimulating contributions to discussions; beyond what is normally expected; 100%
A	Convincingly on target with the purpose of the assignment; evidence of growth; learning difficult to refute; worthy contribution to our understanding; reader not distracted by errors in grammar, writing flow, spelling or punctuation	What is missing may not be missed; accurate; a whole product	Almost always on time; rare but forgivable tardiness	Thought provoking discussions; 100% contribution
A-	Fulfills all primary requirements of the assignment; some evidence of growth; learning difficult to refute; contribution to our understanding; reader not distracted by errors in grammar, writing flow, spelling or punctuation	A whole product but lacks "the extras"; accurate; on target with regard to task	Almost always on time; rare but forgivable tardiness	At least 95% contribution to discussions; dialogue thoughtful and insightful but lacks vigor or conviction
B+/B	Competent and worthy; provides credible evidence of learning and growth; may not completely honor spirit of task; perhaps an "off-day"; errors of grammar, spelling,	Moderate shortcomings; minor elements missing; affects instructor's ability to see the product as	Late and/or often enough to alarm instructor; not necessarily chronic	Moderate participation with some insightful comments

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	punctuation distract the reader	a whole		
B-	Passable; only enough to get by; needs more proofreading or writing skills	Sufficient; least you could do and justify	Some tasks could be late	Barely participates in discussion; class contributions add little insightfulness and do not provoke further discussion
C	Undergraduate level/quality; unsophisticated; exhibits little course concept or concepts	Evidence of learning or growth insufficient	Excessively or repeatedly late	Limited participation in discussion; Little if any preparation or thought in dialogue
F	Unacceptable	Difficult to recognize as the assigned task or not turned in at all	Missing/not submitted	Little if any participation in discussions

The following Rubric will be used when assessing the effectiveness of student participation in Online activities.

Category	0	1 Poor	2 Average	3 Good	4 Excellent	Points Earned
Promptness and contributions	No posts	Limited response to threads/mini assignments; rarely participates freely; rarely responds to others; unequal distribution throughout the week and throughout weekly threads	Responds to most threads but usually only once; limited meaningful response to others; unequal distribution - either posting in beginning and not checking back or posting so late no one can add meaningful response; inconsistent throughout weekly threads	Multiple posting to most threads, but unequal distribution- either posting in beginning and not checking back or posting so late no one can add meaningful response; adds meaningful response to others posts	Multiple postings to all threads; equal distribution throughout the week and throughout the topics; good self-initiative to start additional discussion threads	
Relevance		Responses done are short or irrelevant to the discussion threads	Many posts are short and not meaningful and offers no further insight to topic; occasionally posts off	Posts frequently and always relevant to topic; prompts further discussion to topic; when	Posts frequently and always relevant to topic; prompts further discussion to topic; adds to	

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			task/topic	able (posts in time) adds to discussion by responding to others	discussion by responding to others; cites additional references related to topic	
Connection to readings		Few responses that indicate limited initiative, insight and connection to readings;	Limited initiative, insight and connection to readings; not evident that readings were connected to discussion/mini assignment;	Most posts indicate that readings were understood and connects them to the discussion topic/mini assignment	Almost all topic threads indicate that readings were understood; incorporates reading knowledge well into responses	
Addition to the Learning Community		Makes little effort to participate actively and meaningfully in the community as it develops; seems indifferent	Marginal effort to become an active member of the group	Interacts but not knowledgeable about online protocol- either often lurks in background (responding only after others start) and does not try to direct discussion or overly dominates the discussions	Interacts freely keeping in mind the needs of the community; attempts often to motivate or redirect the group discussion when it strays	

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The University of Maryland, College Park
College of Education

How this course addresses

the MSDE Teacher Technology Standards (MTTS)
and ISTE/NETS*T Foundations for All Teachers
and INTASC Principles
and UMCP COE Conceptual Framework
and NCATE Conceptual Framework

Course Title: Assistive Technology and Universal Design for the General Classroom Teacher EDUC 477/698I

Completion of any course does not certify competency in the identified area, however, it will contribute to development of the competency

Standard and Outcomes	Indicators	Addressed in this course	Examples
I. Information Access, Evaluation, Processing and Application Access, evaluate, process and apply information efficiently and effectively. **ISTE NETS*T IA-IE, VC, VD** **INTASC Principles 1, 9** UMCP Conceptual Framework 1,2,6,7 NCATE Framework 1,2,5	1. Identify, locate, retrieve and differentiate among a variety of electronic sources of information using technology. 2. Evaluate information critically and competently for a specific purpose. 3. Organize, categorize and store information for efficient retrieval. 4. Apply information accurately in order to solve a problem or answer a question.	☒ **Yes** ☐ **No**	**Students are given variety of resources which they must differentiate among for given assignments. A variety of Scavenger Hunts, WebQuests and Treasure Hunts are included. Case study analyzes are included-students must identify , locate and report findings. Students must evaluate a variety of resources (software, websites, Multimedia, AT devices high, low and no related to specific needs of students**
II. Communication **A**. Use technology effectively and appropriately to interact electronically. **ISTE NETS*T VC, VD** INTASC Principles **6, 9, 10** UMCP Conceptual Framework 4,3,6 NCATE Framework 1,3	1. Use telecommunications to collaborate with peers, parents, colleagues, administrators and/or experts in the field.	☒ **Yes** ☐ **No**	**Students communicate via email, video streaming/conferencing, within WebCT discussion threads, Chat rooms (general and group work), dialogue with guest speakers, and participate in other live WebCasts on a variety of subjects related to the course content.**
B. Use technology to communicate information in a variety of formats. **ISTE NETS*T VC, VD** INTASC Principles **6, 9** UMCP Conceptual Framework 1,4,5,6 NCATE Framework 1,3,6	1. Select appropriate technologies for a particular communication goal. 2. Use productivity tools to publish information. 3. Use multiple digital sources to communicate information online.	☒ **Yes** ☐ **No**	**This course empahasizes the importance of utilizing a variety or teaching strategies and resources to meet different learning styles. Specific examples investigate the same content being delivered through word, PP, video audio etc… Students also learn to choose approporiate technologies for particular learning styles and student needs. Examples of published information included in this course include: PP, Websites, webquests, scavenger Hunts, online quizzes and rubrics, Commincation Boards, graphic organizers etc…**
III. Legal, Social and Ethical Issues Demonstrate an understanding of	1. **Identify ethical and legal issues using technology.** 2. Analyze issues related to the uses of technology in	☒ **Yes** ☐ **No**	**Several weeks are devoted to Comar, NCLB, 508, 504 and other legal issues. Additionaly, time is spent throughout discussing and reading about technology applications and strategies (and UD)**

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the legal, social and ethical issues related to technology use. **ISTE NETS*T II, VI A-E** INTASC Principles **3, 4, 5, 7, 9** UMCP Conceptual Framework 2,3,4,5 NCATE Framework 3,4	educational settings. 3. Establish classroom policies and procedures that ensure compliance with copyright law, *Fair Use* guidelines, security, privacy and student online protection. 4. Use classroom procedures to manage an equitable, safe and healthy environment for students.		**that can be used to help ALL students--bit the ethical issues that arise when students and/or schools do not have these technologies avaiable. Case study analyses are used to highlight and discuss issues related to technology choices, issues and appropriateness.**
IV. Assessment for Administration and Instruction Use technology to analyze problems and develop data-driven solutions for instructional and school improvement. **ISTE NETS*T IV A-C** INTASC Principles **1, 7** UMCP Conceptual Framework 3,4,6,7 NCATE Framework 2	1. Research and analyze data related to student and school performance. 2. Apply findings and solutions to establish instructional and school improvement goals. 3. Use appropriate technology to share results and solutions with others, such as parents and the larger community.	☒ **Yes** ☐ **No**	**Mini activites and assignments as well as guest speakers (viryual) aid students in the development of an IEP group project that : analyses data (qualitative and quantiative /SETT framework); applies findings and possible solutions to improve student acheivement; and recommends (via reports) strategies for several classroom subject areas and for parent/IEP conferences..**

Standard and Outcomes	Indicators	Addressed in this course	Examples
V. Integrating Technology into the Curriculum and Instruction Design, implement and assess learning experiences that incorporate use of technology in a curriculum-related instructional activity to support understanding, inquiry, problem solving, communication and/or collaboration. **ISTE NETS*T II, III A- III D** INTASC Principles **1, 2, 3, 4, 5, 7** UMCP Conceptual Framework 1,2,3,6,7 NCATE Framework 1,3	1. **Assess students' learning/ instructional needs to identify the appropriate technology for instruction.** 2. Evaluate technology materials and media to determine their most appropriate instructional use. 3. Select and apply research-based practices for integrating technology into instruction. 4. Use appropriate instructional strategies for integrating technology into instruction. 5. Select and use appropriate technology to support content-specific student learning outcomes. 6. Develop an appropriate assessment for measuring student outcomes through the use of technology. 7. Manage a technology-enhanced environment to maximize student learning.	☒ **Yes** ☐ **No**	**Through multiple mini assignments and case studies student's learn to assess student's needs (as a group and indivudually), identify appropriate technology materials and strategies for instruction., and be able to develop assessment strategies to measure the appropriateness and outcomes of the selected technology material and strategies on student acheievement**
VI. Assistive Technology Understand human, equity and developmental issues surrounding the use of assistive technology to enhance student learning performance and apply that understanding to practice. **ISTE NETS*T VI A-E** INTASC Principles **3, 9**	1. **Identify and analyze assistive technology resources that accommodate individual student learning needs.** 2. Apply assistive technology to the instructional process and evaluate its impact on learners with diverse backgrounds, characteristics	**x Yes** **x No**	**The course was specifically structured to address both indicators in depth**

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UMCP Conceptual Framework 2,3,4,5 NCATE Framework 3,4	and abilities.		
VII. Professional Growth Develop professional practices that support continual learning and professional growth in technology. **ISTE NETS*T IA, IB, VA** INTASC Principles **9** UMCP Conceptual Framework 1,2,3,7 NCATE Framework 1,5	1. **Create a professional development plan that includes resources to support the use of technology in lifelong learning.** 2. Use resources of professional organizations and groups that support the integration of technology into instruction. 3. Continually evaluate and reflect on professional practices and emerging technologies to support student learning. 4. Identify local, state and national standards and use them to improve teaching and learning.	☒ **Yes** ☐ **No**	The courses journey allows participants to take knowledge learned and apply to their own classroom/training setting. Multiple resources for further investigation are included. Standards at the national, state, and LSS level as well as technology standards and IT Literacy standards for both educator and student are discussed and explored in detail. **Standards are addressed early in the course--throughout the semester students apply their findings and new knowledge towards classroom activities and reflect on how this new knowledge will be utilized in their future activities/classroom. Portfolio and final reflection journal are artifacts for documentation. Additionally, a wealth of resources are acquired throughout the course and available for students to return to in the future.**

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Correlation of the MTTS NETS*T & INTASC & UMCP & NCATE

MTTS Addressed							COE – UMCP Addressed								NCATE Addressed						INTASC Principles Addressed									
1	2	3	4	5	6	7	1	2	3	4	5	6	7	ISTE NETS-Teacher Standards	1	2	3	4	5	6	1	2	3	4	5	6	7	8	9	10
X						X	X	X				X	X	I. Technology Operations and Concepts. Teachers demonstrate a sound understanding of technology operation and concepts.	X	X			X		X								X	
		X		X			X		X	X	X	X		II. Planning and Designing Learning Environments and Experiences. Teachers plan and design effective learning environments and experiences supported by technology.	X		X			X			X	X	X		X			
			X	X				X	X	X	X			III. Teaching, Learning, and the Curriculum. Teachers implement curriculum plans, that include methods and strategies that apply technology to maximize student learning.			X	X			X	X	X	X	X		X			
			X						X	X		X	X	IV. Assessment and Evaluation. Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies.		X					X							X		
X	X					X	X	X	X			X	X	V. Productivity and Professional Practice. Teachers use technology to enhance their productivity and professional practice.			X	X								X			X	X
		X			X		X	X	X				X	VI. Social, Ethical, Legal, and Human Issues. Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PreK-12 schools and apply those principles in practice.	X				X				X						X	