EDT 4300: Educational Technology

Spring 2024 Syllabus

Course Information

Class meeting time: Asynchronous
Classroom: Blackboard
Section: 001
CRN: 25775

Course Instructor

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Email is the best way to contact me. Please send all your queries regarding the course to my UTEP Email (datillman@utep.edu). Use of Blackboard mailing system to reach me is not recommended. I answer emails within 48 hours. Please write "EDT 4300" in your subject line.

Course Description

This course covers the fundamentals of educational technologies that support teaching and learning, including: terminology, historical development, learning theories, social impacts, and ethical implications. It focuses on building proficiency in the application of technologies that improve communication and collaboration within schools. Students will examine and evaluate educational technologies in relation to national and state standards, with an emphasis on integrating technology into teaching with the goal of promoting children's digital literacy and learning across academic content areas.

Course Objectives

At a minimum, by the end of the class the participating students should be able to achieve the following course objectives, as prescribed by 19 TAC 228.30 (c)(8) and TEC 21.0452 (b)(5) in alignment with the latest version of the International Society for Technology in Education's (ISTE) standards as appears on the ISTE website (additional course objectives that will be covered time permitting are included in Appendix A and B):

(1) Will have learned to assess their degree of digital literacy and identified resources to address any deficiencies identified by the digital literacy evaluation.

(2) Will have learned to integrate technology effectively into curricula and instruction, including activities consistent with the principles of universal design for learning.

(3) Will have learned to use technology effectively to collect, manage, and analyze data to improve teaching and learning for the purpose of increasing student academic achievement.

(4) Will have learned to continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning.

(5) Will have learned to seek out opportunities for leadership to support student empowerment and success and to improve teaching and learning.

(6) Will have learned to inspire students to positively contribute to and responsibly participate in the digital world.

(7) Will have learned to dedicate time to collaborate with both colleagues and students to improve practice, discover and share resources and ideas, and solve problems.

(8) Will have learned to design authentic, learner-driven activities and environments that recognize and accommodate learner variability.

(9) Will have learned to facilitate learning with technology to support student achievement of the ISTE Standards for Students.

(10) Will have learned to understand and use data to drive their instruction and support students in achieving their learning goals.

[*] Course objectives #4-10 from the ISTE Standards for Educators, Third Edition, 2016 ISTE (International society for Technology in Education), https://www.iste.org/standards/for-educators

Late Coursework

> Late coursework is accepted, but 10% will be deducted for each week of late submission unless a no-penalty extension is requested by student and approved by instructor.

Time Commitment

> The standard workload for a university course requires a minimum of two hours of study time for every class hour. All course work, both in and outside class, should be of high quality and reflect your development as an aspiring technology-savvy teacher.

Course Requirements

> Students are expected to adhere to a social contract of common decency.
> Stealing or academic cheating will not be tolerated.

Course Schedule Changes

The course instructor reserves the right to adjust the course syllabus or change coursework as needed. I will give you ample notice prior to any changes.

Equipment for Course

This course requires that you have weekly access to Blackboard for duration of the class.

Course Readings

There is no required textbook for this course. All course materials will be posted on Blackboard for you to download. You should read required readings and prepare for discussion online. Links to multimedia materials will also be provided.

Students with Disabilities Statement

If you have or believe you have a disability, you may wish to self-identify. You can do so by providing documentation to the Center for Accommodations and Support Services (CASS) located in Union E Room 106. Students who have been designated as having a disability must reactivate their standing with CASS on a yearly basis. Failure to report to this office will place a student on the inactive list and nullify benefits received. If you have a condition which may affect your ability to exit safely from the premises in an emergency or which may cause an emergency during class, you are encouraged to discuss this in confidence with the instructor and/or the director of CASS. You may call 919-747-5148 for general information about the Americans with Disabilities Act (ADA).

Equal Educational Opportunity

In order to create equal educational opportunities in the class, all students are expected to demonstrate respect for the diverse voices and individual differences in the class. Particularly, no person shall be excluded from participation in, denied benefits of, or be subject to discrimination under any program or activity sponsored or conducted by the University of Texas at El Paso on the basis of race, color, national origin, religion, sex, age, veteran status, disability, or sexual orientation. Any member of the University community who engages in discrimination or other conduct in violation of University policy is subject to the full range of disciplinary action, up to and including separation from the University. Complaints regarding discrimination should be reported to the University's Equal Opportunity Office. Inquiries regarding applicable policies should be addressed to the University's Equal Opportunity Office, Kelly Hall, 3rd Floor, 915.747.5662 or eoaa@utep.edu.

Academic Dishonesty Statement

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and

collusion. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another person's as ones' own. More information can be found at: *http://admin.utep.edu/Default.aspx?PageContentID=2084&tabid=30292*

Technical Assistance

If you have technical problems, please contact the UTEP Helpdesk: M-F: 7AM-8PM, Sat: 9AM-1PM, Sun: 12-4PM. On-campus phones: 915-747-5257 Off-campus phones: 915-747-4357. If you are on-campus, you may also visit the ATLAS lab located within the Undergraduate Learning Center or the Technology Support Center in Room 300, Library.

Coursework

Coursework (70 points)

During each week of this class, students will complete one module of coursework activities in Blackboard. It is essential to complete the coursework on time, both to receive full credit, and because many of the activities build on the materials created in previous coursework.

It is important that students complete the coursework in a timely manner, but it is more important that coursework get completed before moving to the next module of coursework activities—missing any of the coursework activities will decrease your likelihood of getting a desirable grade in this class.

Final project (20 points)

The final project will be a portfolio representing a culmination of the work you did in the coursework activities. So long as you complete all of the coursework on time and meeting all criteria then you should not have any difficulties with the final project. The final project will include several components, all of which will be submitted via a Final Project near the end of the semester.

Final exam (10 points)
At the end of the course, a final exam will be conducted to test students on the content that was taught in the first and second half of the semester. The final exam will be primarily open-ended short essay questions and will be submitted via Blackboard near the end of the semester.

Grading

A: The key to getting an "A" grade in this class is completing all the coursework activities before the deadlines, making sure they are meeting the described criteria.

B: If you either meet all the criteria but coursework activities are consistently late, or coursework activities are done on time but do not meet the described criteria, then you will most likely earn a "B" in this class.

C or worse: If you don't meet the described criteria plus coursework activities are consistently completed late then please contact me so we can discuss options for taking an Incomplete or Withdrawing from the class. If you take an Incomplete, then you will have up to 12-months to complete the coursework activities, but can only get a maximum grade of B.

Total possible: 100 points

A: 90-100 points / B: 80-89 points / C: 70-79 points / D: 60-69 points / F: 0-59 points

Course Schedule (subject to change)

#	Week	Coursework Due	Discussion Topics
1	1/16–1/21 [ONLINE]	Module 1 due 1/21: *Digital literacy assessment. Identification of digital literacy resources.*	Overview of syllabus, defining educational technology and educational technology in schools.
2	1/22-1/28 [ONLINE]	Module 2 due 1/28: *Universal design. Integration of technology.*	Educational technology in the classroom and the school.
3	1/29-2/4 [ONLINE]	Module 3 due 2/4: *Collect, analyze data. Increase student engagement.*	Educational technology and teachers. Educational technology and students
4	2/5-2/11 [ONLINE]	Module 4 due 2/11: *Digital skills. Technology-rich classrooms.*	Educational technology historically. Contemporary educational technology.
5	2/12-2/18 [ONLINE]	Module 5 due 2/18: *Professional development.*	Educational technology in informal settings. Adaptation to educational technology.
6	2/19-2/25 [ONLINE]	Module 6 due 2/25: *Teaching and learning.*	Resistance to educational technology. Educational technology action research.

7	2/26-3/3 [ONLINE]	Module 7 due 3/3: *Innovative educational technologies. Diffusion of innovations.*	Educational technology in K-12 as well as higher education. Innovative educational technology.
8	3/4-3/10 [ONLINE]	Module 8 due 3/10: *Evolution of educational technologies. Developing innovations.*	The evolution of technologies that support schools. Factors encouraging and discouraging development of innovation applicable to schools.
9	3/11-3/17	*No assignments this week.*	*Spring Break Holiday.*
10	3/18-3/24 [ONLINE]	Module 9 due 3/24: *Gamification as a pedagogy.*	Roles for gamification and game-based learning in schools and informal learning.
11	3/25-3/31 [ONLINE]	Module 10 due 3/31: *Makification as a pedagogy. Makerspaces.*	Roles for makification and makerspaces in schools and informal education.
12	4/1-4/7 [ONLINE]	Module 11 due 4/7: *Augmented Reality. Virtual Reality.*	Roles for augmented reality (AR) and virtual reality (VR) in schools.
13	4/8-4/14 [ONLINE]	Module 12 due 4/14: *Contextualized instruction. Student engagement.*	The importance of contextualization of instruction. Creating engaging and memorable thematic contexts.
14	4/15-4/21 [ONLINE]	Module 13 due 4/21: *Digital portfolio knowledge and skills. Web 2.0.*	Creating an online portfolio showing your educational technology skills and accomplishments. Using Web 2.0 to deliver dynamic digital content.
15	4/22-4/28 [ONLINE]	Final Project due 4/28:	Educational technology topics synthesis.

		The Final Project is a digital portfolio demonstrating teaching with technology skills.	
16	4/29-5/5 [ONLINE]	Final Exam due 5/5 at midnight.	Summation and conclusion.

Rubric for Coursework

Grade	Standard to be Achieved for Earning this Grade
A	Fully achieves the goals and objectives of the coursework, has made accurate observations, drawn insightful conclusions or extensions, and shows clear understanding of concepts. Communicates effectively. Completed on time.
B	Addresses all aspects of coursework, but goals and objectives may not be fully met. Student displays understanding of main concepts, although some less important ideas may not be in place. Results may be incomplete or not clearly presented.
C	Important goals or objectives of the coursework are not met. Work may need redirection. Gaps in conceptual understanding are present. Student's approach to coursework may lead away from coursework completion. Attempts communication.
D	Goals and objectives of the coursework are not met. Shows little or no evidence of appropriate reasoning. Presents fragmented understanding of concepts. Presents erroneous or extraneous conclusions.
F	Does not attempt coursework.

Student Learning Outcomes and Assessment

The course's learning outcomes will require the student to acquire throughout the semester new knowledge and skills pertaining to educational technology, and then build upon them. The following table provides a list of outcomes for the course.

Student Learning Outcomes	Assessment
By the end of course, the student:	*Assessment procedures:*
Will have learned to assess their degree of digital literacy and identified resources to address any deficiencies identified by the digital literacy evaluation.	Class discussion, coursework activities, and final project.
Will have learned to integrate technology effectively into curricula and instruction, including activities consistent with the principles of universal design for learning.	Class exercises, coursework activities, final exam, final project.
Will have learned to use technology effectively to collect, manage, and analyze data to improve teaching and learning for the purpose of increasing student academic achievement.	Class exercises, coursework activities, and final exam, final project.
Will have learned to continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning.	Class exercises, discussions, coursework activities, and final project.
Will have learned to seek out opportunities for leadership to support student empowerment and success and to improve teaching and learning.	Class exercises, discussions, coursework activities, and final project.
Will have learned to inspire students to positively contribute to and responsibly participate in the digital world.	Class exercises, discussions, coursework activities, and final project.
Will have learned to dedicate time to collaborate with both colleagues and students to improve practice, discover and share resources and ideas, and solve problems.	Class exercises, discussions, coursework activities, and final project.
Will have learned to design authentic, learner-driven activities and environments that recognize and accommodate learner variability.	Class exercises, discussions, and weekly coursework activities, and final project.
Will have learned to facilitate learning with technology to support student achievement of the ISTE Standards for Students.	Class exercises, discussions, and weekly coursework activities, and final project.
Will have learned to understand and use data to drive their instruction and support students in achieving their learning goals.	Class exercises, discussions, and weekly coursework activities, and final project.

APPENDIX A: TExES Competencies Addressed during Course

Here is the list of additional TExES Competencies that this class will address time permitting--

DOMAIN I—TECHNOLOGY APPLICATIONS CORE
Competency 001. The teacher knows technology terminology and concepts; the appropriate use of hardware, software, and digital files; and how to acquire, analyze, and evaluate digital information.

Competency 002. The teacher knows how to use technology tools to solve problems, evaluate results, and communicate information in a variety of formats for diverse audiences.

Competency 003. The teacher knows how to plan, organize, deliver, and evaluate instruction that effectively utilizes current technology for teaching the Technology Applications Texas Essential Knowledge and Skills (TEKS) for all students.

DOMAIN II—DIGITAL GRAPHICS/ANIMATION AND DESKTOP PUBLISHING
Competency 004. The teacher demonstrates knowledge of the principles of design and their application to digital graphics/animation products.

Competency 005. The teacher demonstrates knowledge of principles of typography and page design and knows how to use technology tools to create desktop publishing products.

Competency 006. The teacher knows how to use graphics, animation, and desktop publishing software to produce products that convey a specified message to an intended audience.

DOMAIN III—VIDEO TECHNOLOGY AND MULTIMEDIA
Competency 007. The teacher knows how to produce and distribute digital video and multimedia products.

Competency 008. The teacher demonstrates knowledge of strategies and techniques used in the preproduction, production, and postproduction of video products.

Competency 009. The teacher knows how to design, produce, and distribute multimedia products.

DOMAIN IV—WEBMASTERING
Competency 010. The teacher demonstrates knowledge of strategies and techniques for Web site administration.

Competency 011. The teacher knows principles of Web page design and uses a variety of tools and techniques to design and troubleshoot Web pages for a diverse audience.

Competency 012. The teacher knows how to use Web pages to communicate and interact effectively with others.

APPENDIX B: TEA Test Frameworks Addressed during Course

Here is the list of additional TEA Test Framework for Generalist EC-6 that this class will address time permitting--

10 **Competency 009 (Reading, Inquiry, and Research)**
The teacher understands the importance of research and inquiry skills to students' academic success and provides students with instruction that promotes their acquisition and effective use of those study skills in the content areas.
The beginning teacher:
A. Teaches students to develop open-ended research questions and a plan (e.g. timeline) to locate, retrieve, and record information from a range of content-area, narrative, and expository texts

B. Selects and uses instructional strategies to help students comprehend abstract content and ideas in written materials (e.g., manipulatives, examples, graphic organizers)

C. Selects and uses instructional strategies to teach students to interpret information presented in various formats (e.g., maps, tables, graphs) and how to locate, retrieve, and record information from technologies, print resources, and experts

D. Selects and uses instructional strategies to help students understand study and inquiry skills across the curriculum (e.g., brainstorming; generating questions and topics; using text organizers; taking notes; outlining; drawing conclusions; applying critical-thinking skills; previewing; setting purposes for reading; locating, organizing, evaluating, and communicating information; summarizing information; selecting relevant sources of information; using multiple sources of information; recognizing identifying features of sources, including primary and secondary sources; interpreting and using graphic sources of information) and knows the significance of organizing information from multiple sources for student learning and achievement

E. Knows grade-level expectations for study and inquiry skills in the Texas Essential Knowledge and Skills (TEKS) (e.g. in kindergarten, use pictures in conjunction with writing to document research; in fifth-sixth grade, refine research through use of secondary questions)

F. Provides instruction to develop a topic sentence, summarize findings, and use evidence to support conclusions

G. Understands how to foster collaboration with peers, families, and with other professionals to promote all students' ability to develop effective research and comprehension skills in the content areas

13 **Competency 012 (Viewing and Representing)**
The teacher understands skills for interpreting, analyzing, evaluating, and producing visual images and messages in various media, including electronic, and provides students with opportunities to develop skills in this area.
The beginning teacher:
A. Knows grade-level expectations for viewing and representing visual images and messages as described in the Texas Essential Knowledge and Skills (TEKS)

B. Understands and teaches the characteristics and functions of different types of media (e.g., film, print) and knows how different types of media influence and inform

C. Teaches students to compare and contrast print, visual, and electronic media, including levels of formality and informality (e.g. email, Web-based news article, blogs)

D. Teaches students to evaluate how visual image makers (e.g., illustrators, documentary filmmakers, political cartoonists, news photographers) represent messages and meanings, and provides students with opportunities to interpret and evaluate visual images in various media

E. Knows how to teach students to analyze visual image makers' choices (e.g., style, elements, media) and evaluate how those choices help represent or extend meaning

F. Provides students with opportunities to interpret events and ideas based on information from maps, charts, graphics, video segments, and technology presentations and to use media to compare ideas and points of view

G. Knows steps and procedures for teaching students to produce visual images and messages with various meanings to communicate with others

H. Teaches students how to select, organize, and produce visuals to complement and extend meanings

I. Provides students with opportunities to use technology for producing various types of communications (e.g., class newspapers, multimedia reports, video reports) and helps students analyze how language, medium, and presentation contribute to the message

J. Understands how to foster collaboration with families and with other professionals to promote students' development of media literacy

Competency 014 (Mathematics Instruction)
The teacher understands how students learn mathematical skills and uses that knowledge to plan, organize, and implement instruction and assess learning.
The beginning teacher:
A. Plans appropriate instructional activities for all students by applying research-based theories and principles of learning mathematics

B. Employs instructional strategies that build on the linguistic, cultural, and socioeconomic diversity of students and that relate to students' lives and communities

C. Plans and provides developmentally appropriate instruction that establishes transitions between concrete, symbolic, and abstract representations of mathematical knowledge and that builds on students' strengths and addresses their needs

D. Understands how manipulatives and technological tools can be used appropriately to assist students in developing, comprehending, and applying mathematical concepts

E. Creates a learning environment that motivates all students and actively engages them in the learning process by using a variety of interesting, challenging, and worthwhile mathematical tasks in individual, small-group, and large-group settings

F. Uses a variety of tools (e.g., counters, standard and nonstandard units of measure, rulers, protractors, scales, stopwatches, measuring containers, money, calculators, software) to strengthen students' mathematical understanding

G. Implements a variety of instructional methods and tasks that promote students' ability to do the mathematics described in the Texas Essential Knowledge and Skills (TEKS)

H. Develops clear learning goals to plan, deliver, assess, and reevaluate instruction based on the mathematics in the Texas Essential Knowledge and Skills (TEKS)

I. Helps students make connections between mathematics and the real world, as well as between mathematics and other disciplines such as art, music, science, social science, and business

J. Uses a variety of questioning strategies to encourage mathematical discourse and to help students analyze and evaluate their mathematical thinking

K. Uses a variety of formal and informal assessments and scoring procedures to evaluate mathematical understanding, common misconceptions, and error patterns

L. Understands the relationship between assessment and instruction and knows how to evaluate assessment results to design, monitor, and modify instruction to improve mathematical learning for all students, including English-language learners

M. Understands the purpose, characteristics, and uses of various assessments in mathematics, including formative and summative assessments

N. Understands how mathematics is used in a variety of careers and professions and plans instruction that demonstrates how mathematics is used in the workplace

Competency 016 (Patterns and Algebra)
The teacher understands concepts related to patterns, relations, functions, and algebraic reasoning. The beginning teacher:
A. Illustrates relations and functions using concrete models, tables, graphs, and symbolic and verbal representations, including real-world applications

B. Demonstrates an understanding of the concept of linear function using concrete models, tables, graphs, and symbolic and verbal representations

C. Understands how to use algebraic concepts and reasoning to investigate patterns, make generalizations, formulate mathematical models, make predictions, and validate results

D. Formulates implicit and explicit rules to describe and construct sequences verbally, numerically, graphically, and symbolically

E. Knows how to identify, extend, and create patterns using concrete models, figures, numbers, and algebraic expressions

F. Uses properties, graphs, linear and nonlinear functions, and applications of relations and functions to analyze, model, and solve problems in mathematical and real-world situations

G. Translates problem-solving situations into expressions and equations involving variables and unknowns

H. Models and solves problems, including those involving proportional reasoning, using concrete, numeric, tabular, graphic, and algebraic methods (e.g., using ratios and percent with fractions and decimals)

I. Determines the linear function that best models a set of data

J. Understands and describes the concepts of and relationships among variables, expressions, equations, inequalities, and systems in order to analyze, model, and solve problems

K. Applies algebraic methods to demonstrate an understanding of whole numbers using any of the four basic operations

Competency 019 (Mathematical Processes)
The teacher understands mathematical processes and knows how to reason mathematically, solve mathematical problems, and make mathematical connections within and outside of mathematics.
The beginning teacher:
A. Understands the role of logical reasoning in mathematics and uses formal and informal reasoning to explore, investigate, and justify mathematical ideas

B. Applies correct mathematical reasoning to derive valid conclusions from a set of premises

C. Applies principles of inductive reasoning to make conjectures and uses deductive methods to evaluate the validity of conjectures

D. Evaluates the reasonableness of a solution to a given problem

E. Understands connections among concepts, procedures, and equivalent representations in areas of mathematics (e.g., algebra, geometry)

F. Recognizes that a mathematical problem can be solved in a variety of ways and selects an appropriate strategy for a given problem

G. Expresses mathematical statements using developmentally appropriate language, Standard English, mathematical language, and symbolic mathematics

H. Communicates mathematical ideas using a variety of representations (e.g., numeric, verbal, graphic,

pictorial, symbolic, concrete)

I. Demonstrates an understanding of the use of visual media such as graphs, tables, diagrams, and animations to communicate mathematical information

J. Demonstrates an understanding of estimation, including the use of compatible numbers, and evaluates its appropriate uses

K. Knows how to use mathematical manipulatives and a wide range of appropriate technological tools to develop and explore mathematical concepts and ideas

L. Demonstrates knowledge of the history and evolution of mathematical concepts, procedures, and ideas

M. Recognizes the contributions that different cultures have made to the field of mathematics and the impact of mathematics on society and cultures

N. Demonstrates an understanding of financial literacy concepts and their application as it relates to teaching students (e.g., describes the basic purpose of financial institutions, distinguishes the difference between gross and net income, identifies various savings options, defines different types of taxes, identifies the advantages and disadvantages of different methods of payments savings and credit uses and responsibilities)

O. Applies mathematics to model and solve problems to manage financial resources effectively for lifetime financial security as it relates to teaching students (e.g., distinguishes between fixed and variable expenses, calculates profit in a given situation, develops a system for keeping and using financial records, describes actions that might be taken to develop and balance a budget when expenses exceed income

Competency 025 (Lab Processes, Equipment, and Safety)
The teacher understands how to manage learning activities, tools, materials, equipment, and technologies to ensure the safety of all students.
The beginning teacher:
A. Understands safety regulations and guidelines for science facilities and science instruction

B. Knows procedures for and sources of information regarding the appropriate handling, use, disposal, care, and maintenance of chemicals, materials, specimens, and equipment

C. Knows procedures for the safe handling and ethical care and treatment of organisms and specimens

D. Selects and safely uses appropriate tools, technologies, materials, and equipment needed for instructional activities

E. Understands concepts of precision, accuracy, and error with regard to reading and recording numerical data from a scientific instrument

F. Understands how to gather, organize, display, and communicate data in a variety of ways (e.g., charts, tables, graphs, diagrams, written reports, oral presentations)

G. Understands the international system of measurement (i.e., metric system) and performs unit conversions within measurement systems including the use of non-standard units