I. Course Description: This course enables preservice teachers to effectively use computer-based technology for instructional and professional purposes, and provides participants with the skills and knowledge required for teacher certification in Texas.

II. Rationale: This course prepares teachers for technologies used and expected in K-12 classroom environments. Skills and theories learned in this course are to be utilized and expanded upon in future courses, student teaching, and teaching.

III. International Society for Technology in Education (ISTE) Standards for Teachers


NOTE: The ISTE Standards are presented for future awareness and to increase course participants’ understanding about accepted technology standards at the national and international levels. The course will touch upon some of them as time allows; however, the primary focus of the course is on teacher technology standards adopted by the State of Texas, noted later.
1. Facilitate and Inspire Student Learning and Creativity

Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments. Teachers:

a. promote, support, and model creative and innovative thinking and inventiveness.
b. engage students in exploring real-world issues and solving authentic problems using digital tools and resources.
c. promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes.
d. model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments.

2. Design and Develop Digital-Age Learning Experiences and Assessments

Teachers design, develop, and evaluate authentic learning experiences and assessment incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the NETS•S. Teachers:

a. design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity.
b. develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress.
c. customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources.
d. provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching.

3. Model Digital-Age Work and Learning

Teachers exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society. Teachers:

a. demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations.
b. collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation.
c. communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital-age media and formats.
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4. Promote and Model Digital Citizenship and Responsibility

Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices. Teachers:

   a. advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources.
   
   b. address the diverse needs of all learners by using learner-centered strategies providing equitable access to appropriate digital tools and resources.

   c. promote and model digital etiquette and responsible social interactions related to the use of technology and information.

   d. develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital-age communication and collaboration tools.

5. Engage in Professional Growth and Leadership

Teachers continuously improve their professional practice, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources. Teachers:

   a. participate in local and global learning communities to explore creative applications of technology to improve student learning.

   b. exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others.

   c. evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning.

   d. contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community

IV. Student Learning Outcomes: Not applicable at the undergraduate level.
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V. State Adopted TExES Proficiencies: The State Board for Educator Certification (SBEC) has approved educator certification standards in Technology Applications for all beginning educators. The standards have been developed for inclusion in SBEC-approved educator preparation programs, and are assessed in the Pedagogy and Professional Responsibilities test. See http://www.texas.ets.org/texes/prepMaterials/ for study guide.

1. All teachers use technology-related terms, concepts, data input strategies, and ethical practices to make informed decisions about current technologies and their applications.

2. All teachers identify task requirements, apply search strategies, and use current technology to efficiently acquire, analyze, and evaluate a variety of electronic information.

3. All teachers use task-appropriate tools to synthesize knowledge, create and modify solutions, and evaluate results in a way that supports the work of individuals and groups in problem-solving situations.

4. All teachers communicate information in different formats and for diverse audiences.

5. All teachers know how to plan, organize, deliver, and evaluate instruction for all students that incorporates the effective use of current technology for teaching and integrating the Technology Applications Texas Essential Knowledge and Skills (TEKS) into the curriculum.

(See Technology Applications Standards for All Beginning Teachers I through V with detailed Teacher Knowledge and Application appended at http://www.sbec.state.tx.us/SBECOnline/standtest/standards/techapps_allbegtech.pdf

NOTE: Hold the CTRL key down and click the chosen link.

See http://www.texas.ets.org/texes/prepMaterials/ for study guides for ExCET and TeXES tests.

Domain I – Designing Instruction and Assessment to Promote Student Learning

Comp
ty 004
The teacher understands learning processes and factors that impact student learning and demonstrates this knowledge by planning effective, engaging instruction and appropriate assessments.

The beginning teacher:
1. Understands the role of learning theory in the instructional process and uses instructional strategies and appropriate technologies to facilitate student learning (e.g., connecting new information and ideas to prior knowledge, making learning meaningful and relevant to students.)

Domain II – Creating a Positive, Productive Classroom Environment

Comp
ty 006
The teacher understands strategies for creating an organized and productive learning environment and for managing student behavior.
The beginning teacher:
1. Schedules activities and manages time in ways that maximize student learning, including using effective procedures to manage transitions; to manage materials, supplies, and technology; and to coordinate the performance of non-instructional duties (e.g., taking attendance) with instructional activities.

2. Uses technological tools to perform administrative tasks such as taking attendance, maintaining grade books, and facilitating communication.

**Domain III – Implementing Effective, Responsive Instruction and Assessment**

**Competency 008**
The teacher provides appropriate instruction that actively engages students in the learning process.

The beginning teacher:
1. Applies criteria for evaluating the appropriateness of instructional activities, materials, resources, and technologies for students with varied needs.

**Compeency 009**
The teacher incorporates the effective use of technology to plan, organize, deliver, and evaluate instruction for all students.

The beginning teacher:
1. Demonstrates knowledge of basic terms and concepts of current technology (e.g., hardware, software applications and functions, input/output devices, networks.)

2. Understands issues related to the appropriate use of technology in society and follows guidelines for the legal and ethical use of technology and digital information (e.g., privacy guidelines, copyright laws, acceptable use policies).

3. Applies procedures for acquiring, analyzing, and evaluating electronic information (e.g., locating information on networks, accessing and manipulating information from secondary storage and remote devices, using online help and other documentation, evaluating electronic information for accuracy and validity).

4. Knows how to use task-appropriate tools and procedures to synthesize knowledge, create and modify solutions, and evaluate results to support the work of individuals and groups in problem-solving situations and project-based learning activities (e.g., planning, creating, and editing word processing documents, spreadsheet documents, and databases; using graphic tools; participating in electronic communities as learner, initiator, publishing information in various ways (e.g., printed copy, monitor display, Internet document, video.)

5. Knows how to incorporate the effective use of current technology; use technology applications in problem-solving and decision-making situations; implement activities that emphasize collaboration and teamwork; and use developmentally appropriate instructional practices, activities, and materials to integrate the Technology Applications
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TEKS into the curriculum.

6. Knows how to evaluate students’ technologically produced products and projects using established criteria related to design, content delivery, audience, and relevance to assignment.

7. Identifies and addresses equity issues related to the use of technology.

 Competency 010

The teacher monitors student performance and achievement; provides students with timely, high-quality feedback; and responds flexibly to promote learning for all students.

The beginning teacher:

1. Demonstrates knowledge of the characteristics, uses, advantages, and limitations of various assessment methods and strategies, including technological methods and methods that reflect real-world applications.

 Domain IV – Fulfilling Professional Roles and Responsibilities

 Competency 011

The teacher understands the importance of family involvement in children’s education and knows how to interact and communicate effectively with families.

The beginning teacher:

1. Applies knowledge of appropriate ways (including electronic communication) to work and communicate effectively with families in various situations.

 Competency 012

The teacher enhances professional knowledge and skills by effectively interacting with other members of the educational community and participating in various types of professional activities.

The beginning teacher:

1. Knows the roles and responsibilities of specialists and other professionals at the building and district levels (e.g., technology coordinator,).

 Competency 013

The teacher understands and adheres to legal and ethical requirements for educators and is knowledgeable of the structure of education in Texas.

The beginning teacher:

1. Knows and adheres to legal and ethical requirements regarding the use of educational resources and technologies (e.g., copyright, Fair Use, data security, privacy, acceptable use policies).

 VI. Course Goals and Objectives:

• To demonstrate basic knowledge of basic terms and concepts of current technology;
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- To discuss issues and concerns that become important when implementing technology resources in schools and classrooms;
- To describe in general the terms the Technology TEKS for students and expectations regarding technology use for all beginning teachers.
- To identify how learning theories influence the development of technology integration strategies;
- To identify the unique capabilities of each of the basic software tools (word processing, spreadsheet, graphics, concept mapping, video tools);
- To develop multimedia materials for instruction;
- To match specific kinds of instructional software and software tools to classroom needs;
- To design lesson integration strategies for instructional software, technology tools, and multimedia / hypermedia;
- To identify the role that Internet resources and strategies can play in teaching and learning;
- To develop integration strategies for each of these current and future technologies that match their capabilities to classroom needs;
- To describe some popular uses for technology in today’s curricula;
- To describe legal, ethical, and equity issues related to educational technology.

Participants are strongly encouraged to combine goals from this class with goals in other current courses. Feel free to develop the course unit focus concurrently with a unit being developed in another concurrent or previous class.

VII. Integrated Course Topics:

1. Integrating Multimedia and Hypermedia into Teaching and Learning
   a. Intro to multimedia and hypermedia
   b. Kinds of multimedia/hypermedia resources

2. Learning Theories and Integration Models
   a. Integration strategies
   b. Examples of technology-integrated activities

3. Ethical, Legal, and Equity Issues
   a. Copyright and fair use policies
   b. Acceptable use policies (AUPs)

4. Internet Resources
   a. Effective web searching skills
   b. Metasearch engines
   c. Search engines for children
   d. WebQuests

5. Integrating Word Processing and Spreadsheet Tools
   a. Uses in teaching and learning
   b. Integration across the curriculum
   c. Mail merge

6. Integrating Visual Tools into Teaching and Learning
   a. Visual design principles
   b. Application in electronic slides
VIII. Instructional Methods, Activities, and Policies:

Methods and activities for instruction include: lecture, discussion, cooperative groups and presentations including multimedia, Internet searches, and other activities.

Class Policies:

- **Attendance is essential!** Participants need to attend class regularly and consider punctuality as very important.

- **NOTE:** You will lose four points off your final grade for each unexcused absence. The only legitimate reasons for missing class are 1) involvement in University-sanctioned business such as athletic events; 2) illness as verified by a doctor’s note; and 3) a verifiable death in the family. See the instructor in advance if you anticipate any problems related to your attendance.

- **MISSED CLASS SESSIONS:** It is the student’s responsibility to retrieve materials and information from classmates if he or she misses any class time. Find two course “buddies” to take notes, save extra copies, etc.

Participants are expected to involve themselves in class discussions, fully utilize lab work time, and complete assigned readings, assignments, and presentations. Computer technology must be utilized for all assignments unless the instructor directs otherwise. **You are strongly encouraged to take notes whenever appropriate.** No working on the computer during instructor presentations or class activities or discussions, please.

*Please note the “no food or drink” signs in the lab! No cell phone use (verbal or text messaging). No instant messaging, especially since it creates software problems in the lab.*

IX. Evaluation and Grade Assignment:

Many projects will be assessed upon rubrics provided early in the project assignment. Student evaluation will consist of an assessment of the following:

<table>
<thead>
<tr>
<th>%</th>
<th>Items toward final grade</th>
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</thead>
<tbody>
<tr>
<td>10</td>
<td>WebQuest evaluations and brief reaction paper</td>
</tr>
<tr>
<td>10</td>
<td>Reaction paper on KEDT resources session</td>
</tr>
<tr>
<td>50</td>
<td>Module 1 (group final portfolio for use in future classes—includes all work completed in class)</td>
</tr>
<tr>
<td>10</td>
<td>Module 2 (annotated list of web sites and other materials related group project)</td>
</tr>
<tr>
<td>20</td>
<td>Midterm quiz</td>
</tr>
</tbody>
</table>

You are strongly encouraged to take notes in this class. Bring your class notes to class session. Your notes will assist you with the midterm quiz and successful completion of the course.

**Grading Scale:**

- **A = 90-100%**
- **C = 70-79%**
- **D = 60-79%**
- **F = Below 60%**
### X. **Tentative Course Schedule:**

**August**

25  Introductions; course overview; warm-up exercise

30  Domains of learning; Dale’s Cone of Experience; Communication theory; instructional methods

**September**

1   Exploring the TEKs; Team formation for group projects (modules 1, 2, & 3); module template; tips on using tables in WORD; visual design principles exercise

6   Technology standards for teachers; science websites for children; child-friendly search engines; technology usage strategies for children; Module 2 reminder

8   ACTIVE Framework for technology integration; ASSURE Model

13  Development of module 1 plan in WORD using provided template; learning objectives

15  Development of module 1 plan; Peer review of Module 1 plans

20  Develop PowerPoint presentations on Module 1 plan

22  Finish Module 1 PowerPoints; present Module 1 PowerPoint presentations

27  **Meet in the library** at the circulation desk: copyright law

29  Digital stories

**October**

4   Finish and resent digital stories: discuss implications for the classroom

6   Field trip to Region 2 Educational Service Center

11  Prezi Workshop; Course Review

13  Course exam

18  Develop sample materials for Module 1; develop final portfolio project

20  WebQuests

25  Inspiration and the ASSURE Model

27  Inspiration continued

**November**

1   Learning theories
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3  Alamo Project
8  Present Alamo projects
10 Mail merge and Excel
15 Mindtools and exercise
17 Dawn Stubblefield, KEDT Educational Consultant; free educational resources: be there
22 Using library resources (Meet in library at circulation desk)
24 Thanksgiving!
29 Final project development

December 1 Final project development
6 Present sample materials for Module 1: LAST CLASS; Present of selected final project portfolios: Last class: submit final projects; end of course celebration!

XI. Textbook: none

XII. Bibliography


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**Internet Resources**

Discovery Educator Network: http://www.discoveryeducatornetwork.com/
Georgia Technology Standards for Students: http://www.georgiastandards.org
Georgia Department of Education: http://www.doe.k12.ga.us
Georgia Online Assessment System: http://info.georgiaoas.org/
Galileo-Georgia’s Virtual Library: http://www.galileo.usg.edu
Georgia Public Broadcasting: http://www.gpb.org
High Plains Regional Technology in Education Consortium: http://www.hprtec.org
Marco Polo-Internet Content for the Classroom: http://www.marcopoloeducation.org/home.aspx
National Educational Technology Standards for Teachers: http://cnets.iste.org/teachers/t_stands.html
National Educational Technology Standards for Students: http://cnets.iste.org/students/s_stands.html