STRANDS AND STANDARDS

PRINCIPLES OF EDUCATIONAL INSTRUCTION

Learning that works for Utah
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Course Description

This course examines the principles of educational instruction and prepares future educators to differentiate to meet the needs of all students using educational technology tools. Students will explore ways technology can be used to enhance student autonomy in the classroom while protecting student data. Students will evaluate technology tools based on student learning intentions, develop a professional digital presence, engage with evidence-based information, and identify benefits of collaboration within a professional learning network. Students will develop and design a course within a Learning Management System (LMS) that is accessible for all students and supports student learning outcomes.

Intended Grade Level	9-12
Units of Credit	0.5
Core Code	39.02.00.00.002
Concurrent Enrollment Core Code	39.02.00.13.002
Prerequisite	N/A
Skill Certification Test Number	012
Test Weight	1.0
License Area of Concentration	Secondary Professional Level License
Required Endorsement(s)	
Endorsement 1	K-12 Teaching as a Profession

STRAND 1

Students will use the key principles of learning science and Universal Design for Learning (UDL) to design instruction that maximizes student learning using educational technology to enhance the learning experience.

Standard 1

Discuss the science of learning and explore the key principles of learning science to maximize student learning.

- **Science of learning** summarizes existing cognitive-science research on how students learn and connects it to practical implications for teaching and learning.
- Explore the science of learning key principles and outline the essential knowledge for all educators.
  - **Learning Science Principle 1**: **How do students understand new ideas?**
    - Students learn new ideas by reference to ideas they already know.
  - **Learning Science Principle 2: How do students learn and retain new information?**
    - Practice is essential to learning new facts, but not all practice is equivalent (e.g., spaced practice over mass practice).
  - **Learning Science Principle 3: How do students solve problems?**
    - Effective feedback is often essential to acquiring new knowledge and skills.
  - **Learning Science Principle 4: How does learning transfer to new situations?**
    - Consider the cognitive load theory to tailor instruction for maximum learning.
  - **Learning Science Principle 5: What motivates students to learn?**
    - Provide opportunities for learners to think about what the information means and why it is important to know.
  - **Learning Science Principle 6: What are common misconceptions about how students think and learn?**
    - Students will be more motivated and successful in academic environments when they believe they belong and are accepted in those environments.

Standard 2

Understand and apply Universal Design for Learning (UDL) guidelines when developing effective lesson plans.

- **Universal Design for Learning (UDL)** provides structure for personalizing, accommodating, scaffolding, and accessing background knowledge to improve learning for all students.
- Identify the three networks of the Universal Design for Learning (UDL) guidelines.
- The **WHY** of Learning
  - **Engagement** offers multiple strategies to capture interest and nurture motivation throughout the learning journey.
- The **WHAT** of Learning
  - **Representation** offers a range of methods to aid in comprehending and mastering new information.
- The **HOW** of Learning
  - **Action and Expression** offers various ways for students to demonstrate and articulate their learning through action and expression.

Strand 1 Performance Skill

Students will design a mini lesson (5-10 minutes) to demonstrate their ability to apply the key principles of learning science and Universal Design of Learning (UDL) that includes the use of one (1) educational technology tool.

- How did you apply the key principles of learning science?
- How did you apply Universal Design of Learning (UDL) guidelines?

- Why did you choose the educational technology tool you did?
- Did the educational technology tool selected enhance the learning process? Why or why not?

STRAND 2

Students will explain professional responsibilities of protecting student data when utilizing technology for instruction and learning.

Standard 1

Explain professional responsibilities of protecting student data and privacy under Family Educational Rights and Privacy Act (FERPA).

- **Personal Identifiable Information (PII)** includes information that can be used to distinguish or trace a student's identity either directly or indirectly including, but not limited to:
  - Student number
  - Name
  - Age or Birthdate
  - Email address
  - Phone number
  - Location data
- **Family Educational Rights and Privacy Act (FERPA)** is a federal law that addresses parent rights regarding their student's education records and defines the conditions under which schools may share education records with third parties.
- **Education records** are records, files, documents, or other materials that contain information directly related to a student and is maintained by the school.
- **Confidentiality** is limiting access to student education records to only authorized individuals (e.g., parents, guardians, teachers, counselors, administrators).

Standard 2

Explore and research how Utah State law and student data privacy impacts the use of technology tools for instruction and legal responsibilities within a local education agency.

- **Utah Code 53E-9-309** requires LEAs to ensure there are specific provisions in place for education technology third party contractors (programs, apps, devices)
  - Where does your LEA list approved technologies? (e.g., metadata dictionary, approved application list, LearnPlatform)
  - What is the process for approving new technology products in your LEA?
  - Discuss what legal responsibilities are related with technology associated with third party contractors.
- **Utah Code 53E-9-203** requires educators to get prior written consent from a student's guardian before asking, collecting, or sharing personal student or family information regarding:
  - Political affiliations or philosophies
  - Mental or psychological problems
  - Sexual behavior, orientation, or attitudes
  - Religious affiliations or beliefs
  - Income
  - Illegal, anti-social, self-incriminating or demeaning behavior
  - Critical appraisals of individuals with whom the student or family member has close family relationship
  - Legally recognized privilege and analogous relationship (lawyers, medical personnel, or ministers)
- How can educators ensure online content and classroom materials align with Utah Code 53E-9-203?

Strand 2 Performance Skill

Students will research and present on a current education issue regarding technology in the classroom and how it affects student data and privacy.

STRAND 3

Students will identify and explain how technology tools can assess, engage, and support student academic learning needs and evaluate how technology frameworks enhance student outcomes and teacher effectiveness to meet learning intentions.

Standard 1

Identify how different types of technology tools can be used to assess students' prior knowledge, engage students in the learning process, and support students' academic needs.

- Explore a variety of technology tools that assess students' prior knowledge (e.g., anticipation guide, KWL chart, quizzes, discussion topic, interest form)
- Explore a variety of technology tools that engage students in the learning process. (e.g., interactive videos, digital collaboration, digital creation tools).
- Explore a variety of technology tools that support students academic needs through various ways for students to demonstrate and articulate their learning.
- Compare how different types of technology tools can support or hinder the science of learning and Universal Design for Learning (UDL).

Standard 2

Explain how different types of technology tools can help meet the academic learning needs of students, impact student engagement, and support learning intentions in the classroom.

- **Academic learning needs** is the gap between a student's current knowledge and the knowledge needed to complete or perform a task or set of tasks.
- **Engagement** allows students to participate in active learning focused on the learning goal.
  - **Passive consumption** is scrolling, watching, or playing on a digital device without actively engaging or critically processing the material.
  - **Active consumption** is cognitively or physically engaging in technology-based activities.
- **Learning intention** is a statement written by educators that defines the day-to-day learning goals aligned to state standards.

Standard 3

Investigate how technology tools can supplement classroom instruction to meet the academic learning needs of each student.

- Evaluate common accessibility technology tools to support each student's academic needs. (e.g., screen reader, screen magnifiers, screen contrast, voice recognition, voice amplification devices)
  - **Disability** as a physical or mental impairment that substantially limits one or more major life activities.
  - **Academic learning needs** as the gap between a student's current knowledge and the knowledge needed to complete or perform a task or set of tasks.
  - **Linguistic needs** as providing curriculum in both the primary language and secondary language.
- Discuss how the accessibility and effectiveness of technology tools may differ based on the student's academic needs.
  - How can technology tools help support what students are able to do?
  - How can technology tools help assess student learning?
  - How will technology tools offer supplemental support when students do not learn?

- How can technology tools supplement the learning for students who are already proficient?

Standard 4

Analyze how technology frameworks and models evaluate the effectiveness of technology.

- **SAMR Model** examines how a specific technology tool impacts student learning.
- **PICRAT Framework** examines the relationship between the engagement level and teacher technology instructional design.
- **TPACK Model** examines how technology, content, and pedagogy interrelate.
- **Triple E Framework** examines the student's engagement, enhancement, and extension process.
- Evaluate how technology frameworks and models enhance student outcomes and teacher effectiveness to meet learning intentions.

Strand 3 Performance Skill

Students will observe a classroom and use a technology framework or model to examine the impact of technology tools on student academic needs and outcomes to maximize student learning. Students will create an artifact of their findings.

- Select and justify a technology framework or model.
- Observe the use of technology tools in the classroom.
- Create an artifact evaluating positive and negative effects of the technology tool integration based on selected framework or model to maximize student learning.

Pick one of the following:

Option 1: Students will research how technology tools can support students with disabilities and create a presentation recommending the most effective technology educational supports for students with learning challenges. Students with disabilities could include:

Autism
Deaf-blindness
Developmental delay
Emotional disturbance
Hearing impairment
Intellectual disability
Multiple disabilities
Orthopedic impairment
Other health impairments
Preschool disabled
Specific learning disability (e.g., dyslexia)
Speech or language impairment
Traumatic brain injury
Visual impairment

Option 2: Students will conduct an interview with a current special education educator or paraprofessional about the different uses of technology tools and how they impact student learning in the classroom.

- Why do you use supplemental technology tools in your classroom?
- What challenges have you faced in integrating technology tools into your teaching methods for students, and how have you overcome them?
- How do you ensure that technology tools are used to enhance learning rather than as a distraction for students?
- How do you assess the impact of technology on the academic needs of your students?
- How do you balance traditional teaching methods with the integration of technology to create a well-rounded learning experience for your students?
- Can you share a success story of a student who initially struggled but experienced significant improvement through the use of technology in your teaching approach?

STRAND 4

Students will develop and design a course within a Learning Management System (LMS) that is accessible for all students and supports the student learning outcomes.

Standard 1

Identify the components of effective lessons plans outlined in the Utah High Quality Instructional (HQI) Cycle.

- **Learning intentions** are statements written by educators that defines the day-to-day learning goals aligned to state standards.
- **Success criteria** is how educators and students will know if they have met the learning intentions.
  - **Formative assessment** is an ongoing evaluation of student learning that is administered multiple times during a lesson, unit, or course.
  - **Summative assessment** is a measurement of student learning at the conclusion of a defined instructional period.

Standard 2

Students will identify principles of online design and student accessibility.

- Explain how quality online design can increase student engagement and accessibility to learning materials.
- High-quality design elements include:
  - Images representing a variety of people
  - Appropriate content length to reduce scrolling
  - Embedded content and videos within the LMS
  - Consistent and appropriate fonts and colors
  - Icons representing specific learning tasks
- Accessibility elements include:
  - Labeling images
  - Providing image titles
  - Enabling closed captioning
  - Contrasting text and background color
  - Responsive design (e.g., scaling and appearance on computer vs. mobile device)
  - Multiple means of representation, engagement, and expression

Standard 3

Students will identify primary course elements and features within a Learning Management System (LMS).

- Primary course elements include:
  - Navigation elements
    - Landing page (e.g., Home, Stream, Dashboard)
    - Buttons
    - Course navigation
    - Global navigation
    - Calendar
  - Content Management
    - Course overview (e.g., Syllabus, Stream)
    - Organization systems (e.g., Module, Topic)
    - Content delivery (e.g., Pages, Materials)
  - Content Creation
    - Assignments
    - Embedded elements (e.g,. videos, LTI tools)
    - Hyperlinks

    - Assessment
        - Student dialogue (e.g., Discussions, Question)
        - Quizzes
        - Rubrics
- Primary Course Features include:
    - Communication Methods
        - Messaging
        - Announcements
    - Grading
        - Gradebook
        - Feedback
        - SIS (Student Information System) sync

Performance Skills

Students will design a course within a learning management system (LMS) that includes:

- Landing page
- About Me page
- Organization system (Module or Topic)
- Embedded materials (video or LTI)
- Educational resources
- Hyperlinks
- Assignment with rubric
- Student dialogue
- Quiz

Principles of Educational Instruction Vocabulary

Strand 1

science of learning
Universal Design of Learning (UDL)

Strand 2

Personal Identifiable Information (PII)
Family Educational Rights and Privacy Act (FERPA)
education records
confidentiality
Utah Code 53E-9-309
Utah Code 53E-9-203

Strand 3

academic learning needs
engagement
passive consumption
active consumption
learning intention
disability
linguistic needs
SAMR Model
PICRAT Framework
TPACK Model Triple
E Framework
disability
linguistic needs

Strand 5

learning intentions
success criteria
formative assessment
summative assessment

Skill Certification Test Points by Strand

Coming soon