Technology integration is the incorporation of technology resources and technology-based practices into the daily routines, work, and management of schools. Technology resources are computers and specialized software, network-based communication systems, and other equipment and infrastructure. Practices include collaborative work and communication, Internet-based research, remote access to instrumentation, network-based transmission and retrieval of data, and other methods.

Universal Design for Learning (UDL) is a way of thinking about teaching and learning that gives all students equal opportunity to learn. At its core, UDL means that a teacher designs learning experiences in flexible ways to meet the needs of individual learners. When taking a UDL approach, teachers prepare the learning environment with flexible means, methods, and materials that will allow them to better meet the needs of every student.
Course Description

As today’s classrooms become increasingly diverse, teachers frequently find themselves working to address their students’ varying needs. Emerging technologies allow teachers to create flexible, individualized curricula that can scaffold as well as enrich. Differentiated Instruction is an accepted best practice with proven results for improving student achievement. Many of the new technologies offer educators the means to facilitate the implementation of DI into heterogeneous classrooms.

Course Objectives

Participants will gain a better understanding of effective teaching strategies through exploration of the elements of differentiation. Through improved proficiency in web-based technology, teachers will gather tools for differentiation in their classrooms. This, in turn, will lead to increased student engagement through the use of differentiated instruction.

- As a result of the course’s learning experiences, educators will become more aware of student variability and how that knowledge of Universal Design for Learning (UDL) can transform teaching and learning to improve all learners’ outcomes.
- As a result of the course’s learning experiences, educators will become more competent in their ability to remove the barriers that prevent some students in the district from learning and engaging in the challenging, accessible curriculum.
- As a result of the course’s learning experiences, educators will incorporate UDL principles to foster reflection and continuous improvement in their professional practice.

Course Requirements

The course is designed as a collaborative four-week online learning experience. Course material is arranged in modules and should be viewed in the order listed. There is no textbook to buy. All material is posted on the University eLearning platform. The first two modules are open when the course begins. The last two will be made available after the second week. Students may expect to spend three hours each week participating on the discussion board, posting to a private Journal or class collaboration space, and reviewing course material.

Grading Criteria

Grades are recorded in the course grade book on a weighted points system. Students may view their progress using the My Grades Tool listed under Student Tools. The orientation activity, posts to the discussion board, and class collaboration are included in the participation grade. Students are also expected to post weekly reflections to the discussion forum and submit a written assignment as the final grade.
### Course Expectations

Participation in all assignments and course discussions is required. If you anticipate being away during any part of this course, make plans to access a computer connected to the Internet. Late work is not accepted.

Participants are also expected to have basic computer skills, know how to search the web, understand how to send an email, attach a file, and have basic file management skills. A fairly new computer connected to the Internet works best with the Learning Platform, and familiarity with the learning management tool is also advised.

If you are new to Canvas or online courses, please review the Canvas student tutorial before you begin the course. By logging into Canvas, you agree to the university Acceptable Use Policy, which also covers academic honesty. To become more familiar with this policy, click here.

### Massachusetts Frameworks/Standards

Each weekly unit will incorporate 2016 Massachusetts Digital Literacy and Computer Science Curriculum and ISTE Standards for Teachers.

**2016 Massachusetts Digital Literacy and Computer Science Curriculum Standard 2: Digital Tools and Collaboration (DTC)**

- Digital tools are applications that produce, manipulate, or store data in a digital format (e.g., word processors, drawing programs, image/video/music editors, simulators, Computer-Aided Design (CAD) applications, publishing programs).
- Digital tools are critical for conducting research, communicating, collaborating and creating in social, work, and personal environments. The use of digital tools is integral to success in school and career.

**ISTE Standards for Educators**

1. **Learner:** Educators continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning. Educators:
   1c: Stay current with research that supports improved student learning outcomes, including findings from the learning sciences.
2. **Leader:** Educators seek out opportunities for leadership to support student empowerment and success and to improve teaching and learning.

   2b: Advocate for equitable access to educational technology, digital content and learning opportunities to meet the diverse needs of all students.

   2c: Model for colleagues the identification, exploration, evaluation, curation and adoption of new digital resources and tools for learning.

3. **Designer:** Educator’s design authentic, learner-driven activities and environments that recognize and accommodate learner variability. Educators:

   5a: Use technology to create, adapt and personalize learning experiences that foster independent learning and accommodate learner differences and needs.

   5b: Design authentic learning activities that align with content area standards and use digital tools and resources to maximize active, deep learning.

   5c: Explore and apply instructional design principles to create innovative digital learning environments that engage and support learning.

4. Design and Develop Digital Age Learning Experiences and Assessments

5. Model Digital Age Work and Learning
Course Syllabus

Pre-Course Assignment

Reading: Differentiating Instruction with Technology in Middle School Classroom by Grace E. Smith and Stephanie Throne.

Module 1: What is Differentiated Instruction and UDL Look Like?

Objective: Deepen your understanding of Differentiated Instruction and Universal Design for Learning and your ability to use, features of DI & UDL as it relates to your work as an educator.

Differentiated Instruction

Videos:
- Do Schools Kill Creativity? | Sir Ken Robinson | TED Talks
- Differentiated Instruction in the Classroom at Mesquite Elementary School
- Station Rotation: DI to Reach All Learners

Discussion: Differentiated Learning in the Classroom
How can technology create differentiated learning environments? In what ways can DI benefit your students

Reading: CRCD Framework and Bloom’s Revised Taxonomy
- Ben Schniederman on Collect—Relate—Create—Donate
- Bloom’s Revised Taxonomy

Assignment: Begin exploring EdTechTeacher list of Collect—Relate—Create—Donate web tools. Choose three tools that you would like to incorporate into your classroom. Post your selection in the class discussion forum. How will these tools be used to differentiate your classroom environment?

Additional Resources: How Differentiated Instruction Can Help You Reach Every Student in Class

Module 2: Universal Design for Learning

What is Universal Design for Learning (UDL)?

Essential Questions
- Why would we use UDL as a framework for teaching and learning?
- How do I design learning that addresses learner variability and reduces barriers to learning for all students?

**Objective:** All educators will demonstrate an understanding of the UDL framework, the concept of variability, and the focus on removing barriers.

**What does UDL mean for Educators?**
- To deepen your understanding of UDL go to CAST and learn about [Universal Design for Learning](http://udltheorypractice.cast.org/login). Links to an external site.
- Create an account with CAST - [http://udltheorypractice.cast.org/login](http://udltheorypractice.cast.org/login) Links to an external site.

**UDL Strategies/Resources**
- [UDL Examples and Resources](http://udltheorypractice.cast.org/login).

**Video:** [UDL: Reducing Barriers to Learning](http://udltheorypractice.cast.org/login). Universal Design for Learning Explained with Lego

**Discuss Board:** Discuss ways in which UDL Learning Tools can be integrated in your classroom.

**Assignment:**

**Assignment Objective:** To create a universally designed activity that removes barriers and increases engagement for all participants.

**Directions:** Exploring the different UDL Strategies/Resources.

1. Explore as many of the UDL Strategies/Resources below as you can.
2. Produce a demonstration of your understanding of the benefits of UDL. This can be a written reflection, a video, a song, Flipgrid Reflection, or another creative demonstration of your choice.
3. Submit your product to me as your assignment.

**Module 3:** Differentiated Instruction and UDL

**Objective:** Examine and identify the key skills that students and faculty should possess to leverage technology to support learning and how to teach them.

**Reading:** [Chapter 1 & 2 Integrating Differentiated Instruction and Understanding by Design](http://udltheorypractice.cast.org/login) By Carol A. Tomlinson and Jay McTighe
**Assignment:** Based on what you learned in this module and what you have read, redesign an existing project or assessment that you currently teach. Which new tools could you integrate? How would that help you to differentiate better? In addition to thinking about how it could support struggling learners, how could you also create a technology-rich lesson that would enrich some of your accelerated students? Post your response in the class discussion forum.

**Discuss Board:** Discuss ways in which specific web site and digital tools can be integrated in your classroom.

**Optional Reading:** Technology Integration from George Lucas Foundation: Edutopia A site with technology integration examples, video, lessons, and many useful links. If you click on the Teaching Modules link, you will find subject area-specific integration resources.

**Module 4: Final Assignment**

Considering UDL and DI take a lesson plan and reinvent it using the resources and tools you choose that we explored in previous modules. The lesson should indicate flexibility and various modes of collecting, relating, creating, and donating to account for the different learners in your classroom.

**Reflection:** What prompt you to revision your original lesson plan?

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**Accommodations:**

Framingham State University offers equal opportunities to all qualified students, including those with disabilities and impairments. The University is committed to making reasonable accommodations, as we are necessary to ensure that its programs and activities do not discriminate or have the effect of discriminating on the basis of disability. Academic Support serves students with learning and psychiatric disabilities as well as students with visual, mobility and hearing impairments. If you need further information, please visit the website at: Center for Academic Support or contact Ms. LaDonna Bridges, Director of Academic Support/Disability Services, in the Center for Academic Support and Advising (CASA) at 508-626-4906 or lbridges@framingham.edu.