

EDG6931 - Culturally Responsive Mathematics with Applied Technologies

TECHNOLOGY ENHANCED LEARNING



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Canvas Course Showcase

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EDG6931 - Culturally Sustaining STEM Education

Getting Started



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Welcome to EDG6931 - Culturally Responsive Mathematics with Applied Technologies

CULTURALLY RESPONSIVE MATHEMATICS WITH APPLIED TECHNOLOGIES

GETTING STARTED!

Thank you for joining us! This page will detail the first steps to getting acclimated with this hybrid classroom. Please read the information below regarding the course content and first steps.

WHAT IS THIS COURSE?

The course is designed to incorporate technology in mathematics education, allowing for a more customized learning experience that fosters active engagement. We will study the methods that can help math educators utilize technology to enhance student learning, engagement, retention of knowledge, and understand real-world problems to prepare solutions. In the context of studying particular mathematical topics, we will explore traditional subjects such as addition, multiplication, division, subtraction, and their integration into technology.



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WHAT ARE MY NEXT STEPS?

Please complete the following before the first class session:

- Review the syllabus. | [EDG6931 Syllabus](#)
- Complete your introduction. | [Introductions & Networking](#)
- Complete the beginning of class survey. | [Class Survey](#)
- Review the required readings and lessons for Week 1. | [What are Applied Technologies?](#)
- If you run into technical issues, make use of the help desk. | [Technical Help Desk](#)

COURSE RESOURCES?

- Course documents, readings, presentation links, will be uploaded to the class padlet. | [Class Resources](#)
- Questions are welcome regarding the course or related content, use the question padlet. | [Padlet for Questions](#)

Contact Information



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Example Module



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Introduction to Applied Technologies

WEEK 1 - 12/2/2021 - Introduction to Applied Technologies

Learning Objectives

Upon successful completion of this unit, you will be able to:

- Identify various applications of technology in education
- Describe methods of implementation of games, tools, software, and online learning environments
- Explore various innovative educational resources
- Apply this knowledge in their professional pursuits

Overview

What is the application of technology? How is this useful to our education system?

During Week 1 we will be examining innovative learning options that can be applied to K-12 and higher education systems.

Readings & Resources

1. Martín-Gutiérrez, J., Mora, C. E., Añorbe-Díaz, B., & González-Marrero, A. (2017). Virtual Technologies Trends in Education. *EURASIA Journal of Mathematics, Science and Technology Education*, 13(2). <https://doi.org/10.12973/eurasia.2017.0062a>
2. *Technology in Mathematics Education: Preparing Teachers for the Future – CITE Journal*. (n.d.). Retrieved November 18, 2021, from <https://citejournal.org/volume-5/issue-3-05/mathematics/technology-in-mathematics-education-preparing-teachers-for-the-future>
3. *From Headache to Helpful—Teachers on Using TikTok in the Classroom*. (n.d.). Edutopia. Retrieved November 18, 2021, from <https://www.edutopia.org/article/headache-helpful-teachers-using-tiktok-classroom>

In-Class Activities

1. Introduction to the Course
2. Discussion: How Can We Connect to Students Through Their Online Environment?
3. Demonstration of Applied Technologies

Homework (Due Before Class)

1. Introductions & Networking
2. Class Survey
3. Learning Tool Activity



Example Assignment



Minecraft: Education Edition - Subtraction World



Downloading Minecraft Education:

Today we will be exploring Minecraft: Education Edition. Before you begin the assignment, you must properly install Minecraft. Follow the steps below to do so:

- Navigate to the main website, located at: <https://education.minecraft.net/en-us/homepage>
- Once there, click the "Quick Start" button located in the top-right corner.
- From the options, select educator and then "I have an account" (you will sign-in with your UFL email).
- Begin the download of the game for your appropriate device (Windows, Mac, Chromebook.)

Launching the Game:

- After your game finishes installing, launch Minecraft.
- When you see the login prompt, enter your UFL username and password.
- Navigate through the menu to new worlds.
- Select Subtraction World.

Deliverables:

Great! You should be set up and ready to try the game. Experiment with the world and test the subtraction methods. After you complete your gameplay:

Upload a screenshot of your character and choose a reflection prompt. Write a one-page (12 point font, Times New Roman, double-spaced) paper on your reflection.

CHOOSE A PROMPT BELOW (ONLY 1):

What value do you see in this for of mathematical learning? How does this differ from other methods of teaching?

Does this experience feel immersive? How do virtual environments like Minecraft contribute to the learning experience?

What drawbacks and benefits are there? How can the drawbacks be mitigated in the future?

Introductions

The screenshot shows a learning management system interface with a red sidebar on the left containing various navigation links. The main content area displays a discussion forum titled "WEEK 1 - Introductions and Networking - Discussion". The post was created by "Idriissa Presley-Peterson" on "Nov 13 at 4:10am". The post content includes assignment guidelines and instructions for making a video or audio post. A toolbar for the text editor is shown above the post area. Below the post are search and filter options, a reply input field, and navigation buttons for previous and next posts.

Published Edit ⋮

Introductions & Networking
Idriissa Presley-Peterson
All Sections Nov 13 at 4:10am

WEEK 1 - Introductions and Networking - Discussion

Welcome! Your first assignment of the course is to introduce yourself to the class. You can choose to complete this assignment by making a video post, voice recording, or written word. This exercise provides opportunities to network and learn about your peers. Please see the below guidelines and respond to the question prompts.

Assignment Guidelines:

- 1) State your name, specialization, and academic interests.
- 2) What do you hope to gain from this class?
- 3) How familiar are you with technology and how do you use it?
- 4) What academic or professional projects are you interested in?

After making your introduction, please respond to two peers. This is a good opportunity to find future collaborators with mutual interests.

To make a video or audio post, you can select the option from the text editor toolbar. The button is titled "Record/Upload Media." A screen is linked below:

12pt Paragraph B I U A T²

Search entries or author Unread Subscribed

Reply

◀ Previous Next ▶

Technical Help Desk

The screenshot shows a Canvas course interface. On the left is a red sidebar with various navigation links: Home, Announcements, Syllabus, Modules, Assignments, Discussions (which is currently selected), Grades, People, Collaborations, Google Drive, Office 365, BigBlueButton (Conferences), Outcomes, Files, Pages, Rubrics, Quizzes, and Settings.

The main content area displays a discussion forum titled "Technical Help Desk" by "Technical Help Desk" (Idriissa Presley-Peterson). The post was published on Nov 13 at 2:11pm and is visible to "All Sections". The post content includes:

Technical Help Desk

For those having issues with class software, post here to receive help from your peers. For urgent matters, please reach out to one of the instructors by email.

Email: ipresleypeterson@ufl.edu, jordynhaines@ufl.edu, hongzezhu@ufl.edu

For issues with Canvas:

- For **Canvas support**, please use the Help button located on the bottom left of your course.
- Please see the [Canvas Student Guides](#) to learn more about specific functions.

Browsers and Mobile Devices

1. The Canvas app: Available for iOS or Android: [Canvas Mobile Guides](#)
2. Firefox is the recommended browser for accessing the Canvas LMS (learning management system). If you have problems opening some content, first try another browser. If you are using a mobile device, try accessing the content on a computer.
3. If Flash-based content is used in this course, it won't display on Mobile devices, especially iOS devices.
4. External URLs: To open certain URLs (http vs https) you may be prompted to click on the shield icon in your browser to "allow" access to the content. Simply click on the shield and click the "allow" button when asked.

At the bottom of the discussion page, there are buttons for "Search entries or author", "Unread", and "Subscribed" (which is checked). There is also a "Reply" button and navigation buttons for "Previous" and "Next". A question mark icon is located in the bottom right corner of the main content area.

★ Q&A and Padlet

The image displays a composite view of a digital workspace and a natural scene. On the left, a screenshot of aPadlet shows a board titled "EDG6931 - Course Resources". The board is organized into several sections: "Class Readings", "Course Files", "Week 1-5", "Week 6-10", "Week 11-15", "Final Project", and "Opportunities". Each section contains various course materials such as PDFs, videos, and links. A large, colorful painting of a landscape with a sunset serves as the background for the padlet board. On the right, a close-up photograph of a vibrant orange tulip flower is shown against a dark, out-of-focus background.

EDG6931 - Course Resources

EDG6931 - General Questions
Post your general course questions here, they will be addressed during the course session.

Start Here
If you have a question concerning class, please type so here. Your questions will be anonymous and we can discuss during our next class.

Week 1 - 5 Overview

Weekly Assignments, Topics, Readings, Discussions, and Canvas Layout

- Week 1: 12.2 | Introduction To Applied Technology
 - Assignments
 - Introduction to Applied Technologies
 - Introductions & Networking
 - Class Survey
 - Weekly Readings
 - From Headache to Helpful—Teachers on Using TikTok in the Classroom ↗
 - Technology in Mathematics Education: Preparing Teachers for the Future ↗
 - Virtual Technologies Trends in Education ↗

- Week 2: 12.9 | Teaching Addition & Subtraction
 - Assignments
 - From Traditional to Technology
 - Minecraft: Subtraction World
 - Weekly Readings
 - Girls Who Game: Empowering female students to pursue STEM with Minecraft ↗
 - Minecraft, Teachers, Parents, and Learning: What They Need to Know and Understand ↗
 - New Study: Understanding the Impact of Minecraft in the Math Classroom ↗

- Week 3: 12.16 | Game-Based Learning
 - Assignments
 - Video Games & Education
 - This Week's Class Discussion 3
 - Weekly Readings
 - Video games can develop graduate skills in higher education students: A randomised trial ↗
 - What Video Games Like Doom Teach Us About Learning, According to GBL Guru James Paul Gee ↗

- Week 4: 12.23 | Multiplication & Division
 - Assignments
 - From Traditional to Technology-2
 - Animal Crossing: Money Multiplication
 - Weekly Readings
 - Inside academia's growing interest in 'Animal Crossing' ↗
 - Teaching with digital technology ↗

- Week 5: 1.6 | Culturally Relevant Math Education
 - Project 1
 - Project 1 - Culturally Relevant Math + Tech
 - Assignments
 - Making Math Inclusive
 - Week 1-5 Quiz
 - This Week's Class Discussion 5
 - Weekly Readings
 - Moving Culturally Relevant Pedagogy From Theory to Practice: Exploring Teachers' Application of Culturally Relevant Education in Science and Mathematics ↗
 - Teaching Math Through a Social Justice Lens ↗

- ⋮ ▾ Week 6: 1.13 | Online Teaching Tools
 - ⋮ Assignments
 - ⋮ Software for Online Learning Environments
 - ⋮ This Week's Class Discussion 6
 - ⋮ Weekly Readings
 - ⋮ Online Learning: A Panacea in the Time of COVID-19 Crisis ↗
 - ⋮ Playing Video Games During the COVID-19 Pandemic and Effects on Players' Well-Being ↗
- ⋮ ▾ Week 7: 1.20 | Decimal & Fractions
 - ⋮ Assignments
 - ⋮ From Traditional to Technology-3
 - ⋮ Minecraft: Decimal Garden Creation
 - ⋮ Weekly Readings
 - ⋮ Learning fractions with and without educational technology: What matters for high-achieving and low-achieving students? ↗
- ⋮ ▾ Week 8: 1.27 | Accidental/Incidental Learning
 - ⋮ Assignments
 - ⋮ Learn Through Play
 - ⋮ This Week's Class Discussion 8
 - ⋮ Weekly Readings
 - ⋮ Incidental Learning In The Classroom ↗
- ⋮ ▾ Week 9: 2.3 | Time, Money, & Commerce
 - ⋮ Assignments
 - ⋮ Commerce is Math
 - ⋮ Lakeland Review
 - ⋮ Weekly Readings
 - ⋮ Trouble in Lakeland: This Game Teaches the Impact of the Dairy Industry on the Lakes ↗



Week 6 - 10 Overview

- ⋮ ▾ Week 10: 2.10 | Technology Benefits for STEM/Non-STEM
 - ⋮ Project 2
 - ⋮ Project 2 - STEM/Non-STEM Development
 - ⋮ Assignments
 - ⋮ How Can Technology Help Other Subjects?
 - ⋮ Week 6-10 Quiz
 - ⋮ 0 pts
 - ⋮ This Week's Class Discussion 10
 - ⋮ Weekly Readings
 - ⋮ Student attitudes to games-based skills development: Learning from video games in higher education. ↗

Week 11 - 15 Overview



- Week 11: 2.17 | Distance & Location
 - Assignments
 - How Math Helps Us Travel
 - Pokemon Go: Wellness and Learning
 - Weekly Readings
 - Educating Adults with a Location-Based Augmented Reality Game: A Content Analysis Approach ↗
- Week 12: 2.24 | Learning Styles and Techniques
 - Assignments
 - How Do Teaching Methods Affect Students?
 - This Week's Class Discussion 12
 - Weekly Readings
 - "It gives you that sense of hope": An exploration of technology use to mediate student engagement with mathematics ↗
 - Informal and deliberate learning with new technologies. ↗

- Week 15: 3.17 | Applying the Knowledge
 - Assignments
 - Professional and Academic: Culturally Responsive Mathematics & Technology
 - Week 11-15 Quiz 0 pts
 - Course Feedback
 - Weekly Readings
 - Computer-based technology and student engagement: A critical review of the literature. ↗
- Final Project
 - Final Project Description

- Week 13: 3.3 | Volume & Weight
 - Assignments
 - From Traditional to Technology-4
 - Tinkercad: Virtual Engineering
 - Weekly Readings
 - Taking Professional Development From 2D to 3D: Design-Based Learning, 2D Modeling, and 3D Fabrication for Authentic Standards-Aligned Lesson Plans ↗

- Week 14: 3.10 | Collaborative Learning
 - Assignments
 - Online Collaborative Environments
 - This Week's Class Discussion 14
 - Weekly Readings
 - Foster a more collaborative learning environment. ↗
 - The influence of online mathematics learning on prospective teachers mathematics achievement: The role of independent and collaborative learning ↗