RUTGERS
Graduate School of Education

Learning and Teaching
Graduate School of Education
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Education & Computers

05:300:350:9F

Spring 2021

3 credits

Instructor: Carolyn Q. Hickey	Email: carolyn.hickey@gse.rutgers.edu
Phone #: 908.625.1685	Online asynchronously
Office Hours: by arrangement	Prerequisites or other limitations: Admission to the program
Mode of Instruction: ___ Lecture _x_ Seminar ___ Hybrid ___ Online ___ Other	Permission required: _x_ No __ Yes

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentations: https://ods.rutgers.edu/students/documentation-guidelines. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: https://ods.rutgers.edu/students/registration-form.

Course description: Education & Computers establishes a foundation for using the computer and technology in a variety of educational settings across all subject areas. The course is hands-on in nature, with a focus on current trends. Additionally, learners can expect to discuss theory, practice, and social/philosophical issues related to the use of computers in education. Some familiarity with computers is necessary.

FYI: I will do my very best to tailor this course toward the field of healthcare. There are times when I am able to provide both content and activities that are more suited to that profession than education. However, not always. Therefore, when the topic or focus seems most applicable to "teachers", please remember that we all need to be life-long learners. In addition, many of you will serve as trainers, mentors, coaches, supportive colleagues, etc. in ways that ask you to know about effective teaching and learning!

 Course details:

- **Mode of instruction: Online/asynchronous. There are no in-person classes or required synchronous activities.**
- **Course website: https://canvas.rutgers.edu**

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- **Class schedule: January 19 to May 3, 2021**
- **Prerequisites: None**
- **Permission required: No**

Contact information:

- **Preferred Email Address: carolyn.hickey@gse.rutgers.edu**
- **Cell Phone:(908)625-1685 (please introduce yourself via text, first) Utilize if more than 24 hours have passed and you haven't received a response from me .**
- **Virtual office hours (Zoom or FaceTime) by arrangement**

Required text:

- **Gonzalez, Jennifer:** *Teacher's Guide to Tech.* **2020 Edition.**

https://cultofpedagogy.teachable.com/p/teachersguidetotech2020

I have requested a student discount code for the *Teacher's Guide to Tech* **for our class. The discount code is: 2020EDCMP350. Here are instructions to purchase the book and use the code: http://teachersguidetotech.com/using-a-coupon-code/**

- **Various linked articles and Rutgers library resources (linked in each module where assigned)**

Required equipment:

- **You will need access to a microphone that can hook to your computer and a digital camera to participate in some of the multimedia portions of the class.**
- **Arrange access to a family member's or friend's computer if possible. We rely on working equipment, so it is your responsibility to have a backup plan in case of equipment failure.**

SAS Core Curriculum Learning Goals Met by this Course: CCO

Analyze the relationship that science and technology have to a contemporary social issue.

For a complete list of Core Curriculum learning goals, see*: https://sasoue.rutgers.edu/docman-docs/curriculum/858-revised-core-curriculum-5-2018-1/file*

For more information about the SAS Core see: *https://sasundergrad.rutgers.edu/degree-requirements/core*

Organization: The course is broken up into six primary "modules" so that you can focus on identified topics as we move through the course. You can access the modules by clicking on the "Modules" link on the left-hand side of the Canvas site. The first three modules are designed to help you acquire knowledge of theory, background, and the various technologies used. The second three modules put theory into practice and demonstrate how to apply technology to teaching.

By the end of the course, you should be able to:

- Provide a foundation for using computers and technology effectively.
- Improve understanding of computers and technology (both hardware and software) as necessary to support the first goal.
- Discuss the advantages and limitations of computers and computer-based technologies.
- Begin to understand how to plan effective learning activities with technology.
- Demonstrate an awareness of teaching standards such as the New Jersey Student Learning Standards (NJSLS) for Technology.
- Apply technology to develop 21st-century literacy skills, higher-order skills, and creativity.
- Employ the basic principles of multimedia design for a website.
- Establish familiarity with trending topics in technology and provide an assessment (both highlights and pitfalls) of those trends as they relate to learning and teaching.
- Provide discourse on social, equity, ethical, accessibility, and legal issues surrounding the use of technology.
- Analyze the relationship that technology has to equitable access to high-quality education.
- Examine and reconsider knowledge and beliefs about the role of technology in learning
- Utilize computers and technology to support professional growth.

Ground rules for the Course:

- Be sure to check in often! Each module will have several activities and I anticipate you working on something each week. Each module includes its own page that shows due dates and helps you stay organized.
- Remember, this course will require a total of 45 hours of "meeting" (quotes because we don't actually meet face-to-face) time along with additional reading/study time. Expect to spend as much time engaging with this course as you would if it met face to face. Most college courses are 3 hours a week in "class" and 6 hours a week reading and studying.
- The great thing about the course is that it is asynchronous (you are not required to attend class at a certain time), so you can choose how and when to spend your time. This makes your learning very independent. As a result, you need to stay on top of things. I have designed the course in such a way that you'll need to stay involved.
- My advice is to get things done earlier rather than later. Things happen. Your computer can crash. The power might go out. We must cover a lot of material in a short amount of time. It's best not to wait until the last minute. As Murphy's Law states: Anything that can go wrong WILL!
- If something does go wrong, contact me right away.
  - If you have an emergency, let me know as soon as reasonably possible.
  - ALWAYS backup all data. That means having at least two copies of work on different storage media. (i.e. in the cloud and on your computer)
  - It is your responsibility to make sure you have working equipment and a plan of action if you have problems.
- Please read the *Traits of a Successful Online Learner* before you get started. This will help you to understand what is expected of a learner taking this course. Here are some additional tips from the Rutgers Learning Centers: https://rlc.rutgers.edu/succeedonline

Email policy:

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- Please use carolyn.hickey@gse.rutgers.edu , when possible. Email through Canvas is okay, too. I just don't check that as frequently.
- You are responsible for all course-related communication. Course updates and other important communication will occasionally be sent to you using the Canvas "Inbox" and "Announcements". These tools will send you an additional email notification. Do not rely on email alone. Check Canvas often for updates.
- The course website on Canvas is populated with your email address as it stands in the University's directory at the time when you enroll in the course. Notification emails will go to that address unless you change it.
- If you wish to receive emails at a different address than the one found in the University's directory, you can add a personalized email address to Canvas by clicking on the "Account" tool on the left-side red bar. Click "Account" and then "Settings". You will see "Ways to Contact" on the right side. Just press "+ Email Address" to add yours! https://community.canvaslms.com/docs/DOC-10594-4212710336
- If you wish to change the way Canvas notifies you, instructions can be found here: https://community.canvaslms.com/docs/DOC-10624

The course requires effort on your part and your grade will reflect that effort. This course is primarily about learning and teaching. I want you to see and understand the technological tools available to people in both healthcare and education. More importantly, I want you to leave the class with new instructional strategies that promote higher-order thinking skills. Most of all, I want this to be a worthwhile experience for you.

I am here to listen if you have any questions and concerns, so don't hesitate to reach out to me at carolyn.hickey@gse.rutgers.edu , by using the Canvas "Inbox" or by setting up an appointment for a Zoom or Facetime call through text. When it comes to email, please understand that I cannot always provide an immediate response. You should expect a response within 24 hours. My suggestion is to aim to complete assignments with enough time to send and receive a response if questions arise.

Assignments, activities, and projects: There are four primary ways in which learning is assessed in this course.

- Threaded Discussion topics will be posted in each module. These are 20% of the final grade.
- Each module includes Assignments and Activities. These are 25% of the final grade.
- There is an overarching Website Project that runs the length of the course. This project contains several components worth 35% of the final grade.
- Healthcare Technology Resource Review Presentation. This presentation is 20% of the final grade.
- For consistency, assignments are almost always due on Monday nights.

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Module	Title	Dates Assigned
Module 1	**Why Should We Use Technology?** **Theoretical Foundations of Learning**	1/19 – 2/1
Module 2	**The Tools: Computers as They Apply to Learning**	2/2 – 2/15
Module 3	**Networking & The Internet and Their Impacts on Learning**	2/16 – 3/1
Module 4	**Technology for Communication & Collaboration**	3/2 – 3/22
Module 5	**Multimedia for Learning**	3/23/– 4/12
Module 6	**Impacts of Integrating Technology**	4/13 – 5/3

Grading: grades are based upon a 100-point scale:

A   **90 - 100 points**

B+   **87 - 89 points**

B   **80 - 86 points**

C+   77 - 79 points

C   70 - 76 points

D   60 - 69 points

F   0 - 59 points

Grading policies: Care, respect, and integrity are expected in written and classroom exchanges. All written work, including postings on Canvas, should be proofread for clarity, spelling, and grammatical errors. Please use language that is appropriate for the classroom setting and maintain a professional tone in discussion postings and assignments. Outside sources, in any assignment, must be referenced appropriately (either APA or Chicago style is acceptable).

Graded assignments: If you miss an assignment, it is at my discretion whether to allow a make-up. If there are questions or an assignment cannot be completed due to an emergency, contact me as soon as possible. Illness will require a doctor's note. Missing assignments will result in a grade of 0.

Late policy: Any assignment in this course will be accepted late with a 1 point per day late assessment.

Academic integrity: All issues of academic integrity are referred to the Rutgers University policy on academic integrity. This policy can be found in detail on the University website at: http://academicintegrity.rutgers.edu. I expect that you will comply with standards of academic integrity in this course. Assignments should be your own work, except in the case of a required group product. The consequence of violating policies of academic integrity and other elements of the student code of conduct is serious and can have a tremendous negative impact on your academic progress and future career.

Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com (via Canvas) for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. The use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site. Students who do not agree should contact the course instructor immediately.

Teaching standards: This course is based heavily upon ISTE NETS standards located here: http://www.iste.org/standards

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The course addresses the following New Jersey Professional Teaching Standards (2014). You can find the complete listing of NJPTS here:
http://www.state.nj.us/education/code/current/title6a/chap9.pdf

Standard One: Learner Development. The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.

1. Performances:

2) The teacher creates developmentally appropriate instruction that takes into account individual learners' strengths, interests, and needs and that enables each learner to advance and accelerate his or her learning

iii. Critical Dispositions:

2) The teacher is committed to using learners' strengths as a basis for growth, and their misconceptions as opportunities for learning

Standard Two: Learning Differences. The teacher uses an understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.

1. Performances:

3) The teacher designs instruction to build on learners' prior knowledge and experiences, allowing learners to accelerate as they demonstrate their understandings

1. Essential Knowledge:

6) The teacher knows how to access information about the values of diverse cultures and communities and how to incorporate learners' experiences, cultures, and community resources into instruction.

iii. Critical Dispositions:

1) The teacher believes that all learners can achieve at high levels and persists in helping each learner reach his or her full potential

Standard Three: Learning Environments. The teacher works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self-motivation.

1. Performances:

2) The teacher develops learning experiences that engage learners in collaborative and self-directed learning and that extend learner interaction with ideas and people locally and globally

1. Essential Knowledge:

1) The teacher understands the relationship between motivation and engagement and knows how to design learning experiences using strategies that build learner self-direction and ownership of learning;

2) The teacher knows how to help learners work productively and cooperatively with each other to achieve learning goals

5) The teacher knows how to use technologies and how to guide learners to apply them in appropriate, safe, and effective ways.

iii. Critical Dispositions:

3) The teacher is committed to supporting learners as they participate in decision-making, engage in exploration and invention, work collaboratively and independently, and engage in purposeful learning; and

4) The teacher seeks to foster respectful communication among all members of the learning community.

Standard Four: Content Knowledge. The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches, particularly as they relate to the Common Core Standards and the New Jersey Student Learning Standards and creates learning experiences that make these aspects of the discipline accessible and meaningful for learners to assure mastery of the content.

1. Performances:

1) The teacher effectively uses multiple representations and explanations that capture key ideas in the discipline, guide learners through learning progressions, and promote each learner's achievement of content standards

7) The teacher uses supplementary resources and technologies effectively to ensure accessibility and relevance for all learners

iii. Critical Dispositions:

1) The teacher realizes that content knowledge is not a fixed body of facts but is complex, culturally situated, and ever-evolving. He or she keeps abreast of new ideas and understandings in the field.

Standard Five: Application of Content. The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

1. Performances:

1) The teacher develops and implements projects that guide learners in analyzing the complexities of an issue or question using perspectives from varied disciplines and cross-disciplinary skills

1. Essential Knowledge:

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4) The teacher understands how to use digital and interactive technologies for efficiently and effectively achieving specific learning goals

iii. Critical Dispositions:

3) The teacher values flexible learning environments that encourage learner exploration, discovery, and expression across content areas

Standard Six: Assessment. The teacher understands and uses multiple methods of assessment to engage learners in examining their own growth, to monitor learner progress, and to guide the teacher's and learner's decision-making.

1. Performances:

4) The teacher engages learners in understanding and identifying quality work and provides them with effective descriptive feedback to guide their progress toward that work;

5) The teacher engages learners in multiple ways of demonstrating knowledge and skill as part of the assessment process

Standard Eight: Instructional Strategies. The teacher understands and uses a variety of instructional strategies to encourage learners to develop a deep understanding of content areas and their connections, and to build skills to apply knowledge in meaningful ways

1. Performances:

7) The teacher engages learners in using a range of learning skills and technology tools to access, interpret, evaluate, and apply information

1. Essential Knowledge:

3) The teacher knows when and how to use appropriate strategies to differentiate instruction and engage all learners in complex thinking and meaningful tasks;

4) The teacher understands how multiple forms of communication (oral, written, nonverbal, digital, and visual) convey ideas, foster self-expression, and build relationships;

5) The teacher knows how to use a wide variety of resources, including human and technological, to engage students in learning

iii. Critical Dispositions:

3) The teacher is committed to exploring how the use of new and emerging technologies can support and promote student learning.

The course, as part of RU-GSE's Teacher Education program, addresses components of CAEP (Council for the Accreditation of Educator Preparation) Standard 1 (2013). You can find the complete listing of CAEP standards here: http://caepnet.org/standards/

Standard 1. Content and Pedagogical Knowledge: "*The provider ensures that candidates develop a deep understanding of the critical concepts and principles of their discipline and, by completion, are able to use*

discipline-specific practices flexibly to advance the learning of all students toward attainment of college- and career-readiness standards."

Specifically, this course includes "*references to applications of new technologies to educational situations":*

- *Standard 1.1 states that: "Candidates demonstrate an understanding of the 10 InTASC standards at the appropriate progression level(s) in the following categories: the learner and learning; content; instructional practice; and professional responsibility" (NOTE: The 10 InTASC standards are aligned to the NJPTS and include many references to applications of technology.)*
- *Standard 1.5 states that: "Providers ensure that candidates model and apply technology standards as they design, implement and assess learning experiences to engage students and improve learning; and enrich professional practice."*

Additionally, CAEP's May 2018 Handbook describes educational technology infusion as a "crosscutting theme" of which the following elements are addressed by this course:

The technology crosscutting theme addresses incorporation of technology to improve the effectiveness of school and district functions, enhance instruction, and manage student and assessment data.

January 19 to February 1	Module 1: Why Should We Use Technology in Our Classrooms and Elsewhere? The purpose of this module is to examine learning theory and apply it to support the use of technology in the classroom.
Learning Objectives	· **VoiceThread Introductions**
	· **Syllabus**
	· **FAQ questions**
	· **Technology standards**
	· **Theoretical foundations**
	· **Website project proposal**

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Readings	Many links may only be available when logged into the Canvas course shell.
&	· Read the syllabus. If you have any questions about the course, you can send me a message via email or ask in the course FAQ questions.
Assignments	· Read: *The Traits of a Successful Online Learner*
Note: Many links may only be available when logged into the Canvas course shell.	· Read: Rutgers University Learning Centers: *How to Succeed in an Online Course*

· Read: Gonzalez, J: *The Teacher's Guide to Tech* (2020) Introduction, Why Bother Learning About Technology? (pp. 9-27), Getting to know the SAMR model (pp. 28-29)

· Examine: *P21st Century Skills Whitepaper*. AACTE. 2010.

· Examine: The *New Jersey Student Learning Standards*. 2020.

o Standard 8: *Computer Science and Design Thinking*

o Standard 9: *Career Readiness, Life Literacies, and Key Skills*

· Examine: **ISTE's standards** 2020.

· Read: Surgenor, P: *How Students Learn, Behaviourism, Cognitivism, Constructivism, & Learning Styles* UCD Teaching & Learning Resources. Jan. 2010.

· Read: Hung, D: *Theories of Learning and Computer-Mediated Instructional Technologies.* Educational Media International, v38 pp. 281-87 Dec. 2001. (Click on the link above, log in to ERIC, and click on "PDF Full Text".)

· Watch: my narrated PowerPoints: Why Teach With Technology & Theoretical Foundations

Assignments & Activities:

January 25 by 11:59 P.M.

o Participate in Threaded Discussion (1.5 points for two posts)

o Complete: VoiceThread Introductions (3 points)

February 1 by 11:59 P.M.

o Participate in Threaded Discussion (1.5 points for two posts)

o Complete: Website Project Proposal (6 points)

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February 2 **to** **February 15**	**Module 2: Overview of the tools: Hardware and Software as they Apply to the Learning: The purpose of this module is to understand the basics of hardware and software and how their advancements can help learners**

Learning Objectives	·	**Hardware overview**
	·	**Software overview**
	·	**Website Project rubric**

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Readings	<u>**Readings**</u>:
&	· **Watch Narrated PowerPoint:** *Computer Hardware*
Assignments	· **Read:Strickland, J:** *What's inside my computer?* **How Stuff Works: A Discovery Company.**
Note: Some links may only be available when logged in to the Canvas course shell.	· **Browse: GCF Global:***Computer Basics*
	· **Watch Narrated Healthcare Software.pptx**
	· **Browse: Gonzalez, J:** *The Teacher's Guide to Tech* **(2020) Audience Response & Backchannels (pp. 63-65), Digital Portfolios (pp. 97-99), Games (p. 112), Interactive Lessons (pp. 123-125), Mind Mapping (pp. 148-151), Writing (pp. 221-227)**

CHOOSE TWO

·   **Read: Brown, Gavin:** *Replacing Paper Textbooks with eBooks and Digital Devices* **Pacific University February 2012.**

·   **Read: ProCon.org:** *Should Tablets Replace Textbooks in K-12 Schools?* **Britannica December 2018.**

·   **Read: DeKanter, N:** *Gaming Redefines Interactivity for Learning* **TechTrends: Linking Research & Practice to Improve Learning, p26-32 May-June 2005.**

Optional **Read: Shah, N:** *Special Education Pupils Find Learning Tool in iPad Applications* **Education Week, v30 n22 p1, and 16-17 Mar 2013. 3 pp. (Click on the link above, log in to ERIC, and click on "PDF Full Text".)**

<u>**Assignments & Activities for Module 2:**</u>

February 8 by 11:59 P.M.

- **Participate in a Threaded Discussion (2 points: one point per post)**
- **Complete: Software Evaluation Activity (4 points)**

February 15 by 11:59 P.M.

- **Complete: Website Project Rubric (7 points)**

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February 16 to March 1	Module 3: Networking and the Internet This module will examine how networking and the Internet work .
Learning Objectives	**Introduction to networking** **Web evolution as it pertains to learning about others (blogs and writing online)** **Safety, security, and validity online**
Readings and Activities	**Watch: my narrated PowerPoints:** *Narrated Networking* **.** **Read: Tyson, J:** *How Internet Infrastructure Works* **(Links to an external site.)How Stuff Works: A Discovery Company.** **Browse: Magid, L:** *Connect Safely* **(Links to an external site.) Updated regularly.** **Browse: November, A:** *Education Resources for Web Literacy* **(Links to an external site.): updated 2015** **Browse:** *OnGuard Online!* **(Links to an external site.)an FTC site that breaks down security issues into explanations, games, and videos.** **Browse: Gonzalez, J:** *The Teacher's Guide to Tech* **(2020) Cloud Storage (pp. 80)** **Point Carrying Assignments:** **February 22 by 11:59 P.M.** **Complete the "Critical Navigation Skills" blog activity (2 points)** **Participate in a Threaded Discussion (2 points - 1 point per post)** **March 1 by 11:59 P.M.** **Partner response for "Critical Navigation Skills" blog activity above (1 point)** **Play 3 games on the "OnGuard" site. Further instructions are available by clicking here. (3 points)**

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March 2 **to** **March 22**	**Module 4: Using Technology for Communication & Collaboration:** Lev Vygotsky said that learning is the result of collaboration to construct common cores of knowledge. This module discusses the ways in which technology can support Vygotsky's social constructivist ideas.

Learning Objectives	· Appreciate the changes and challenges presented by **"Participatory Culture"** in today's digital society. · Learn about creative ways social media tools might be used . · Discuss issues with the implementation of such tools in the workplace · Learn about content curation online and the wisdom of the crowd.

Readings **&** **Assignments** **Note: Some links may only be available when logged in to the Canvas course shell.**	<u>**Readings**</u>: · Watch: my narrated PowerPoints: Social Networks & Curation.pptx · Read: Jenkins, H. *[Confronting the Challenges of Participatory Culture](#)*. MacArthur Foundation. 2009. · Read: Ek, Jessica : [Social Media Dos and Don'ts for Nurses](#) · Browse: Gonzalez, J: *The Teacher's Guide to Tech,* (2020) Blogging & Website building (pp. 66-69), Global Learning (pp. 113-115), Social Media (pp. 189-191) <u>**Assignments & Activities**</u>: **March 9 by 11:59 P.M.** ● Participate in a threaded discussion (2 points - one per post) ● Complete Basic Website project (15 points) **March 22 by 11:59 P.M.** ● Complete: Interactive components of the website project (5 points) ● Provide: Feedback on a classmate's website (1 point)

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March 23 **to** **April 12**	**Module 5: Multimedia: The purpose of this module is to examine and discuss the role of multimedia in healthcare .**
Learning Objectives	· **Audio Visual Technology** · **Discussion of web multimedia (Podcasting, screencasting, streaming, and more).** · **Create multimedia!**
Readings **&** **Assignments** **Note: Some links may only be available when logged in to the Canvas course shell.**	<u>**Readings**</u>**:** · **Watch: my narrated PowerPoints: Multimedia.pptx and Audio & Visual Technology.pptx** · **Read: Shank, P:** *<u>The Value of Multimedia in Learning</u>* **Aug. 2008** · **Examine:** *<u>Multimodal Literacies</u>* **NCTE (National Council of Teachers of English) 2008.** · **Read: Walsh, K.** *<u>Mayer's 12 Principles of Multimedia Learning</u>* **EmergingEdTech, June 2017** · **Browse: Gonzalez, J:** *The Teacher's Guide to Tech***, (2020) Podcasting (pp. 168-170), Video: Animation & Production (pp. 207-210), Video: Live Streaming & Short Form (pp. 211-212) Video: Screencasting (pp. 213-215)** <u>**Assignments & Activities**</u>**:** **March 30 by 11:59 P.M.** ● **Participate in a threaded discussion (2 points: one per post)** ● **Add the specified multimedia components to your website (7 points)** **April 5 by 11:59 P.M.** ● **Submit first half of Healthcare Technology Resource Review Presentation** ● **Provide feedback to a second classmate's website**

April 12 by 11:59 P.M.

- **Provide feedback to a third classmate's website**

- **Complete second half of Healthcare Technology Resource Review Presentation**

April 13 **to** **May 3**	**Module 6: Impact of Integrating Technology : The purpose of this module is to examine the challenges that result from technology implementation. The module will also look at distance learning.**
Learning Objectives	· **Distance learning** · **Legal, social, and ethical issues associated with implementing technology** · **What it all means & where do we go from here?**

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Readings	**Readings:**
&	· **Watch: my narrated PowerPoints:** *Issues with Implementing Technology Nurses.pptx*
Assignments	*Digital Divide*
	Link
Note: Some links may only be available when logged in to the Canvas course shell.	· **Read: Morin, A:** *What is Universal Design for Learning* **(2018)**
	· **Read: McKee, T:** *Thirty Years of Distance Education: Personal Reflections.* **International Review of Research in Open and Distance Learning, v11 n2 p100-109 May 2010. 10 pp. (Click on the link above, log in to ERIC, and click on "Full Text from ERIC".)**
	· **Read: Pape, L:** *Blended Teaching and Learning.* **Education Digest: Essential Readings Condensed for Quick Review, v76 n2 p22-Oct 2010. 6 pp. (Click on above link, log in, and click "PDF Full Text")**
	· **Browse: Gonzalez, J:** *The Teacher's Guide to Tech,* **(2020) Learning Management Systems (pp. 131-133) Content Libraries (pp.86-91), Research (pp. 181-182), Virtual & Augmented Reality (pp. 216-220)**

Assignments & Activities:

April 20 by 11:59 P.M.

- **Participate in a threaded discussion (2 points - one per post)**

- **Watch & Respond to a classmate's Healthcare Technology Resource Review Presentation**

April 27 by 11:59 P.M.

- **Watch & Respond to a second classmate's Healthcare Technology Resource Review Presentation**

- **Submit: Website and course reflection short essay (5 points)**

May 3 by 11:59 P.M.

- **Outstanding revisions to your website are due**
- **Outstanding revisions to the Healthcare Technology Resource Review Presentation**

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Learning goals:
Students will develop:
- knowledge of the mathematics in the early elementary grades;
- detailed knowledge about the development of children's mathematical thinking;
- ways to build instruction based on the development of students mathematical thinking;
- a repertoire of pedagogical techniques and routines related to the above including forms of assessment as well as how to leverage instructional materials for these goals; and
- an understanding of equity and access inside and outside of the mathematics classroom and modifications for various learners.

Continue to reflect on your role as a mathematics teacher within a community.

Course catalog description:
This course focuses on the details of children's mathematics thinking, as well as on how to use student thinking to ground learning about the teaching of mathematics. As we address student thinking and instructional practices we will also discuss ways to accommodate various learners and critical aspects of the teaching and learning of mathematics and: equity (racial, ethnicity, SES, gender, language, (dis)ability), the use of mathematical and pedagogical tools for meeting the needs of all students. We will use the state content standards, readings, student work, classroom video, curricula, practicum placements, instructional scenarios, as well as designing and implementing lessons to examine these issues. The course will help you think about implementing mathematics instruction that is conceptually focused.

New Jersey Teaching Professional Standards addressed in this course:

Standard 1. Learner Development	The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary
Standard 2. Learning Differences	The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.
Standard 3. Learning Environments	The teacher works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self motivation.
Standard 4. Content Knowledge	The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches, particularly as they relate to the Common Core Standards and the New Jersey Core Curriculum Content Standards and creates learning experiences that make these aspects of the discipline accessible and meaningful for learners to assure mastery of the content.
Standard 5. Application of Content	The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

Standard 6. Assessment	The teacher understands and uses multiple methods of assessment to engage learners in examining their own growth, to monitor learner progress, and to guide the teacher's and learner's decision-making.
Standard 7. Planning for Instruction	The teacher plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.
Standard 8. Instructional Strategies	The teacher understands and uses a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections, and to build skills to apply knowledge in meaningful ways
Standard 9. Professional Learning	The teacher engages in ongoing individual and collaborative professional learning designed to impact practice in ways that lead to improved learning for each student, using evidence of student achievement, action research, and best practice to expand a repertoire of skills, strategies, materials, assessments, and ideas to increase student learning

Council for the Accreditation of Educator Preparation (CAEP) Standards:

Standard 1. Content and Pedagogical Knowledge	The provider ensures that candidates develop a deep understanding of the critical concepts and principles of their discipline and, by completion, are able to use discipline-specific practices flexibly to advance the learning of all students toward attainment of college- and career-readiness standards.
Standard 2. Clinical Partnerships and Practice	The provider ensures that effective partnerships and high-quality clinical practice are central to preparation so that candidates develop the knowledge, skills, and professional dispositions necessary to demonstrate positive impact on all P-12 students' learning and development.
Standard 3. Candidate Quality, Recruitment, and Selectivity	The provider demonstrates that the quality of candidates is a continuing and purposeful part of its responsibility from recruitment, at admission, through the progression of courses and clinical experiences, and to decisions that completers are prepared to teach effectively and are recommended for certification. The provider demonstrates that development of candidate quality is the goal of educator preparation in all phases of the program.
Standard 4. Program Impact	The provider demonstrates the impact of its completers on P-12 student learning and development, classroom instruction, and schools, and the satisfaction of its completers with the relevance and effectiveness of their preparation.
Standard 5. Provider Quality Assurance and Continuous Improvement	The provider maintains a quality assurance system comprised of valid data from multiple measures, including evidence of candidates' and completers' positive impact on P-12 student learning and development. The provider supports continuous improvement that is sustained and evidence-based, and that evaluates the effectiveness of its completers. The provider uses the results of inquiry and data collection to establish priorities, enhance program elements and capacity, and test innovations to improve completers' impact on P-12 student learning and development.

Common Cores State Standards for Mathematics (CCSSM): http://www.corestandards.org/math

Course materials:

Carpenter et al. (1999). (**CM**) Children's Mathematics: Cognitively Guided Instruction (2nd Edition). Heinemann. (ISBN: 978-0-325-05287-8)

Coggins et al. (2007). (**EL**) English Language Learners in the Mathematics Classroom. Corwin Press (1st or 2nd Edition). (ISBN: 978-1-4833-3178-2)

Featherstone et al. (2011). (**ST**) Smarter Together: Collaboration and Equity in the Elementary Classroom. Reston, VA: National Council of Teachers of Mathematics. (ISBN: 978-0-87353-656-1)

Other readings will be available electronically **on our Canvas site.**

Course assignments:

Attendance (*this policy is separate from the participation grade*): You are allowed ONE absence, which I will assume is for a good reason. Beyond that, your final grade will be reduced as indicated (unless, of course, you have a doctor's note or other documentation indicating a bona fide reason): 2 absences—reduction of a half grade; 3 absences—reduction of 1 full grade; 4 absences—failing grade in course. Again, if it is an excused absence, you

are responsible for notifying me, reviewing the week's module and classwork, and seeking assistance from classmates in order to earn participation points.

Class Participation (20 points): You are expected to participate in class. Each week you will have readings and you will need to be prepared to discuss the content of the readings and ask questions in class. Aside from the readings, we will be engaging in many discussions, group work, and individual activities in class. Your engagement in the course determines how successful the class will be and how much you will learn. You can earn a maximum of 2 points each class for in-class participation, individual assignments, completing the readings, and completing group work. **If you miss a class for an excused absence, you can make up the points by doing out of class activities.** We only have 30 hours to explore different ways to think and teach mathematics and then you need to be able to teach math on your own! We need to make the most of this limited time together.

Assessment of Student Work (35 points): **TBD based on clinical placements for Phase 2.**
You will collect and analyze student work from your student teaching placement classroom. The student work should include a **pre-assessment** of students' mathematical work as well as a **post-assessment** of mathematical work. Choose at least 3 students that represent different learner groups (e.g. students with disabilities, English Learners, low status students, high status students, those struggling with the concept). Specify the groups that the students come from and analyze the mathematical thinking in the pre and post assessments for each student. Specify evident knowledge and place the student in terms of where they are in a pattern of learning. Additionally, discuss specific goals or instructional interventions for moving the student forward in their mathematics understanding. The goal of the project is to show exact knowledge of student thinking and trajectories of mathematics learning, and to use this knowledge to adapt instructionally.

Reflection on a Problem of Practice (20 points): **TBD based on clinical placements for Phase 2.**
You will define a problem you are currently having in your student teaching experience and **find two mathematics teaching blogs/websites that speak to how you can improve your teaching practice**. There are a number of master teachers that post on Twitter, Facebook, and elsewhere that you can learn from in addition to your practicum teacher and the teacher education program. This is to build a virtual community of mathematics teachers to continue your learning. **In addition to posting the link (with web address) of the blogs in your forum post, you describe the problem, what attempts have been tried and how your resource choice will provide a new perspective/approach to resolve it in your practice. You will also need to participate in two forum topics posted by others. You will receive points for your postings if they are thoughtful and relate to class topics.**

To maintain high quality discussions, here are some guidelines:
- Post in a timely manner. Do not save course reading or postings until the last minute. Because part of your responsibilities will include responding to your peers' posts, a late post can jeopardize your peers' contributions and grades.
- Provide thoughtful, detailed responses to questions and your peers' posts. It is necessary to support your opinions and ideas with material from our class readings and discussions.
- Use academic language (not "texting language" you might use on a cell phone with friends) for your on-line contributions. Make sure you cite material/text/concepts from other sources.

Microteaching – Questioning Video (25 points): **TBD based on clinical placements for Phase 2.**
You will make one video of your own teaching, with an emphasis on questioning. The assignment requires written examples of questions in preparation for the encounter with the learner(s), and a written reflection on the experience. One of the goals is for you to have to illustrate your understanding of equitable mathematics instruction. In addition, you will reflect on your mathematics instruction and discuss how you will continue to transform the classroom into one that engages in more substantive mathematics learning. The goal of

the project is to enact instructional practices to engage students in ways consistent with the CCSSM Standards for Mathematical Practice.

Grading policy:

A = 100-90%	B+= 89-87%
B = 86-80%	C+= 79-77%
C = 76-70%	D = 69-60%
F < 60%	

If you need ANY special accommodations during the course, please see me after the *FIRST* class.

Academic Integrity

The highest standards of academic integrity are expected of all students. The failure of any student to meet these standards may result in suspension or expulsion from the university and/or other sanctions as specified in the academic integrity policies at Rutgers University.

Violations of academic integrity include, but are not limited to: cheating, fabrication, tampering, plagiarism, stealing, or facilitating such activities. The university academic integrity policies are available at the link below: http://academicintegrity.rutgers.edu

Course Schedule (subject to change depending on clinical internships, pacing, and student learning):

Class Date	Topic and Standards	Readings that are DUE for class	Graded Assignments TBD
Jan. 20 Week 1	Fair Sharing Developing Number Sense of Fraction	Canvas: Empson EL: Ch 4 Canvas: Civil & Khan	
Jan. 27 Week 2	Understanding Fractions	Canvas: Empson Ch 3 Canvas: Siebert & Gaskin	
Feb. 3 Week 3	Equivalence and Order Addition & Subtraction	Canvas: Empson Ch 6	
Feb. 10 Week 4	Fractions and Decimals Grouping Students	Canvas: Empson Ch 7 Canvas: Whitten	
Feb. 17 Week 5	Group-worthy Tasks Multiplication & Division	ST: Ch 4 & 7 Canvas: Taylor-Cox	
Feb. 24 Week 6	Questioning as a Technique Formative Assessments	EL: Ch 7 CM: Ch 9 Canvas: Barton	
Mar. 3 Week 7	Mathematical Discussions Decimals	Canvas: Parrish CM: Ch 10	
Mar. 10 Week 8	Geometry & Measurement Inclusivity	EL: Ch 1 & 6 Canvas: Treahy	
Mar. 17	Spring Break		
Mar. 24 Week 9	Technology & Media	Canvas: Chappell & Thompson	
Mar. 31 Week 10	Equity & Status	Canvas: Martin ST: 5 & 6	