RUTGERS
Graduate School of Education

Learning and Teaching
Graduate School of Education
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Education and Computers

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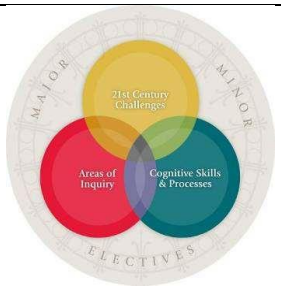
Spring 2021

Online Tuesday, January 19 to Monday, May 3, 2021

Instructor: Cynthia Pancer, EdD	Email: cynthia.pancer@gse.rutgers.edu
	Phone calls by appointment.
Mode of Instruction: ___ Lecture ___ Seminar ___ Hybrid __X_ Online ___ Other	Permission required: _x_ No __Yes

Course Description: (as it appears in the GSE Catalog)
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 recommended; no prior computer skills are required.

Disability Policy: Rutgers University welcomes students with disabilities into all 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 documentation: 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



SAS Core Curriculum Learning Goals Met by this Course: **CCO-2**
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*

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

- Provide a foundation for using computers and technology effectively in the classroom.
- 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 in the classroom.
- Understand how teachers plan effective learning activities with computers and computer-enhanced lessons.
- Demonstrate an understanding of the roles of teaching standards such as the NJCCCS for Technology and ISTE NETS in learning and teaching.

- Apply technology to develop learners' 21st Century literacy skills, higher order skills, and creativity.
- Employ basic principles of multimedia design for educational activities.
- 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 in learning and teaching.
- 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 the classroom.
- Utilize computers and technology to support professional growth.

Council for the Accreditation of Educational Preparation (CAEP) Objectives

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 while engaging students in the applications of technology to learning experiences. In addition to Standard 1, as noted above, the CAEP Standards make explicit reference to applications of technology in Standard 3: • Standard 3.4 states that: "Providers present multiple forms of evidence to indicate candidates' developing content knowledge, pedagogical content knowledge, pedagogical skills, and the integration of technology in all of these domains."

International Society for Technology Instruction (ISTE) Teaching Standards

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

New Jersey Professional Standards for Teachers (NJPTS 2014)

http://www.state.nj.us/education/profdev/profstand/standards.pdf

Subject Matter Knowledge

Teachers know and understand:

1.4: Concepts inherent in numeracy to enable students to represent physical events, work with data, reason, communicate mathematically, and make connections within their respective content areas in order to solve problems.

Teachers value and are committed to:

1.6: Enthusiasm for the discipline(s) they teach and in making connections to everyday life.

Teachers engage in activities to:

1.8: Make effective use of multiple representations and explanations of disciplinary concepts that capture key ideas and link them to students' prior understanding.

1.9: Evaluate teaching resources and curriculum materials for their completeness, accuracy and usefulness for representing particular ideas and concepts.

Human Growth and Development

Teachers know and understand:

2.1: How students construct knowledge, acquire skills and develop habits of mind and how to use instructional strategies that promote student learning.

Teachers value and are committed to:

2.5: The belief that all children and adolescents bring talents and strengths to learning.

2.6: Appreciation for multiple ways of knowing.

Teachers apply:

2.9: Learning theory to accommodate differences in student intelligence, perception, cognitive style and achievement levels.

Diverse Learners

Teachers know and understand:

3.4: The negative impact of bias, prejudice, and discrimination on students and society.

Instructional Planning and Strategies

Teachers know and understand:

4.1: How to plan instruction based on students' needs, developmental progress and prior knowledge.

4.2: Available and appropriate resources and materials for instructional planning.

4.3: Techniques for modifying instructional methods, materials and the environment to help all students learn.

4.4: A variety of instructional approaches and the use of **various technologies**, to promote thinking and understanding.

Teachers value and are committed to:

4.5: The development of students' critical thinking, independent problem-solving and performance capabilities.

Teachers engage in activities to:

4.6: Identify and design instruction appropriate to students' stage of development, learning styles, strengths and needs.

4.10: Plan and develop effective lessons by organizing instructional activities and materials, incorporating a wide range of community and **technology resources**, to promote achievement of lesson objectives.

Assessment

Teachers engage in activities to:

5.7: Enhance their knowledge of learners and evaluate students' progress and performance using a variety of formal and informal assessment techniques to modify teaching and learning strategies.

Learning Environment

Teachers know and understand:

6.2: How the classroom environment influences learning and promotes positive behavior for all students.

Teachers value and are committed to:

6.4: The role of students in promoting each other's learning and recognize the importance of peer relationships in creating a climate of learning.

6.6: The expression and use of democratic values in the classroom.

Teachers engage in activities to:

6.7: Maintain a learning community in which students assume responsibility for themselves and one another, participate in decision-making and work collaboratively and independently.

6.12: Prepare students for and monitor independent and group work that allows for full and varied participation of all individuals.

Special Needs

Teachers engage in activities to:

7.7: Meet the needs of all learners by using a wide range of teaching techniques to accommodate and modify strategies, services and resources, **including technology**.

Communication

Teachers know and understand:

8.1: The power of communication in the teaching and learning process.

Teachers engage in activities to:

8.7: Model effective communication strategies and questioning techniques in conveying ideas and stimulating critical thinking**.**

Collaboration and Partnerships

Teachers know and understand:

9.9: Institute parent/family involvement practices that support meaningful communication, parenting skills, enriched student learning, volunteer and decision-making opportunities at school and collaboration to strengthen the teaching and learning environment of the school.

Professional Development

Teachers know and understand:

10.1: How education research and **other methods of inquiry** can be used as a means for continuous learning, self-assessment and development.

Teachers value and are committed to:

10.3: Professional reflection, assessment and learning as an ongoing process.

10.4: Collaboration with colleagues to give and receive help.

Course Text

Davidson, C. N. (2012). Now you see it: How technology and brain science will transform schools and business for the 21st century. New York, NY: Penguin Books.

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Reading List

American Association of Colleges of Teacher Education & Partnership for 21st Century Skills (P21). (Sept. 2010). 21st Century Knowledge and Skills in Educator Preparation. Retrieved from http://www.p21.org/storage/documents/aacte_p21_whitepaper2010.pdf .

DeKanter, N: *Gaming Redefines Interactivity for Learning* TechTrends: Linking Research & Practice to Improve Learning, p26-32 May-Jun 2005. (Click on link above, login to ERIC, and click on "PDF Full Text".)

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Pape, L. (2010). *Blended Teaching and Learning*. Education Digest: Essential Readings Condensed for Quick Review, v76 n2 p22-Oct 2010. 6 pp. (Click on link above, login to ERIC, and click on "PDF Full Text".)

Peters, D. (Sept. 2005). *Mayer's Principles for the design of Multimedia Learning*. Retrieved from http://designerelearning.blogspot.com/2005/09/mayers-principles-for-design-of.html.

State of New Jersey Department of Education. (2010). Core Curriculum Content Standards: Technology. Retrieved from http://www.state.nj.us/education/cccs/standards/8/index.html .

Strickland, J: *What's inside my computer?* How Stuff Works: A Discovery Company. Retrieved from http://computer.howstuffworks.com/inside-computer.htm.

TechTrends: Linking Research & Practice to Improve Learning, p26-32 May-Jun 2005. (Click on link above, login to ERIC, and click on "PDF Full Text".)

Wikipedia. (2013). Child Internet Protection Act. CIPA act of 2000. Retrieved from http://en.wikipedia.org/wiki/Children's_Internet_Protection_Act.

Wetschler, E. (Feb. 2011). *Going Out of Print* . District Administration: Solutions for School District Management. Retrieved from http://www.districtadministration.com/article/going-out-print.

Unit Objectives

Title	Objectives
Unit 1 School: Past, Present and Future	1. Discriminate didactic, tutorial instructional methods from student-centered, interactive, exploratory instructional methods. 2. Explain differing views of educational technology and its role in today's world, educational environments, and beyond. 3. Compare key learning theories such as behaviorist, cognitive, and constructivist and relate them to technology, teaching, and learning. 4. Describe various teaching styles through the lens of learning theories and describe their impact on technology, teaching, and learning through these theoretical lenses. 5. Appreciate and understand ISTE and NJ state standards for educational technology usage.
Unit 2 Quality Digital Learning Materials	1. Relate the components and functions of a computer system to teaching and learning tasks. 2. Identify advantages and risks of educational software packages and gaming as they apply to the classroom. 3. Identify advantages and risks of associated with hypermedia. 4. Describe changes to classrooms that may result as both hardware and software advance.

Unit 3 Networking	1. Identify the benefits and risks to students related to the use of the Internet and instruction. 2. Review methods of insuring student safety on the Internet. 3. Critique validity and quality of websites and software programs for the purposes of teaching and/or learning. 4. Appraise the changes brought about by the "Read/Write" web to the teaching of literacy.
Unit 4 Collaboration	1. Identify, critique, and use various social and collaborative tools and explain their role in teaching and learning. 2. Discuss participatory culture and its role in classrooms. 3. Create a collaborative website. 4. Defend the use of social and collaborative tools. 5. Collaborate in writing a letter to parents asking permission for students to engage in online social activities.
Unit 5 Multimedia	1. Describe how the Internet can provide audio and visual support to teaching and learning. 2. Identify emerging technologies that may affect teaching and learning. 3. Report on a recent technology innovation that affects education. 4. Create multimedia that incorporates digital images, audio, and video. 5. Discuss when materials are used under a "fair use" clause.
Unit 6 Technology Integration	1. Social, ethical, and legal issues associated with integrating technology into the curriculum. 2. Apply knowledge gained from this course to discuss desirable characteristics of schools in the future. 3. Critique an educational website for legitimacy, ease-of-use, and timeliness. 4. Evaluate an educational website's potential to support instruction. 5. Design a test of the educational website's effectiveness.

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Course Schedule and Assignment Due Dates

Expectation: Assignments are due by midnight on the specified Due Date. That said, I live in a different time zone; and I do not stay up until midnight to grade your work.

Discussions are an exception. They close on the Due Date and you cannot participate.

My teaching style: Any time you do not earn full credit on an assignment I will make comments in the Gradebook and allow you to resubmit. If you will take the time to revise your work, I will invest the time to re-score it for full credit. We're here to learn.

		Assignments and Discussions	Due Date	Points
Unit 1	**School: Past, Present and Future**			
Begin Jan 19	Week 1	Introduce Yourself	Jan 25	5
	Week 2	Discussion: What is a School? Discussion: Learning from the Distraction Experts	Feb 1	2 2
	Week 3	Project Proposal	Feb 8	4
Unit 2	**Quality Digital Learning Materials**			
	Week 4	Discussion: Going Out of Print Discussion: Blended Model	Feb 15	2 2
		Software Evaluation	Feb 15	5
	Week 5	Project Rubric	Feb 22	4
		Discussion: SmartBoard Discussion: Wikipedia and Credibility	Feb 22	2 2
Unit 3	**Networking**			
	Week 6	Project First Draft	March 1	4
	Week 7	Project Interactive Component	March 8	4
		Internet Safety	March 8	5
		No Class Saturday, March 13 - Sunday, March 21		
Unit 4	**Collaboration**			
	Week 8	Discussion: Children Blogging and Internet Stars Discussion: Internet Power: Hoaxes, Horror Stories and Hurtful Posts	March 22	2 2
		Project Revisions	March 22	0
	Week 9	Project Classmate Critique	March 29	4
		FanFiction	March 29	5
Unit 5	**Multimedia**			
	Week 10	Discussion: Multimodality Discussion: Web Badges	April 5	2 2
		Project Multimedia Component	April 5	4

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	Week 11	Current Event Presentation	April 12	5
Unit 6	**Technology Integration**			
	Week 12	Project Reflection	April 19	3
		Future School		4
	Week 13	Classroom Technology Resource Review Presentation	April 26	20
	Week 14	Discussion: Fair Use Discussion: Virtual Reality	May 3	2 2
End May 3		Course Evaluation	May 3	**3 extra credit

Grading: Grading will be on 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

Your final grade is based on the points in this chart, not on the percentages in the Canvas Gradebook. Canvas percentages do not predict your final grade. The Canvas Modules and Gradebook are just communication tools for the duration of our time together, then they go away. When the course is over I will manually enter your grade into REGIS, which is the only permanent record of your course grade.

Academic Integrity Policy: Any violation of academic honesty is a serious offense and is therefore subject to an appropriate penalty. Refer to http://academicintegrity.rutgers.edu/academic-integrity-policy/ for a full explanation of policies.

Care, respect, and integrity are expected in written and classroom exchanges: All written work, including postings on eCollege, 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 both your E-college postings and classroom discussions. Outside sources, in any assignment, must be referenced appropriately (APA is the Rutgers preferred style)

Late Policy: Assignments are due by midnight on the specified Due Date, with some wiggle room possible.