

Education and Computers/05:300:350/Section 3
Index: 31316
Rutgers, The State University of New Jersey
Graduate School of Education

Class Meets: Thursday/7:40-10:20 PM/ED-208
Course Instructor: Dr. James O'Kelly
Office Location: Room 321A: GSE/T (6:30-7:20 PM)/Th (6:30-7:20 PM)
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Course Description (as noted in the GSE catalogue)

Education and Computers establishes a foundation for using the computer in a variety of educational settings across all subject areas through programming, application programs, computer-based instruction, and social/philosophical issues of computers in education.

Overview

This course has been designed to address the New Jersey Core Content Curriculum Standards ([NJCCCS](#)) for Technology, the ISTE National Educational Standards and Performance Indicators for Teachers ([NETS-T](#)), and the ISTE National Educational Standards and Performance Indicators for Students ([NETS-S](#)).

Over the course of the semester students will address through readings, lectures, and discussions a set of topics pertinent to the use of computer technology in the classroom. Students will also learn to use a variety of computer programs and applications that will enhance their skills as

Course Goals:

1. Provide a foundation for using computers and technology effectively in the classroom.
2. Think critically about the advantages and limitations of computers and computer-based technologies in the classroom.
3. Understand how teachers plan effective learning activities with computers and computer-enhanced technologies.
4. Use computers and computer-enhanced technologies to support professional growth.
5. Develop a rich understanding of the roles of the NJCCCS for Technology, NETS-T, and NETS-S in teaching and learning.
6. Develop students' 21st Century Learning Skills using computer-enhanced technology.
7. Critique Internet and multimedia learning tools.

Readings

This course will use a variety of articles and audiovisual materials that are available at our ecollege website, online videos that can be accessed through ecollege. Students should have readings done prior to each class meeting. I will demonstrate how to use Doc Sharing during our first class meeting. Also, there is an online book about *Universal Design for Learning* available in Doc Sharing. Please make sure that you have read this book by Class Meeting 12. (Do not wait until the last minute to read the book!)

A significant portion of a student's grade will be based on participation in discussions and activities that will be based on assigned readings.

Communications

If you need to speak with me privately, you may meet with me at my office prior to our class meeting. My main tool for communicating with you will be via ecollege and email. Ecollege employs my old rcj account when transmitting email. However, PLEASE use my gse account (james.o'kelly@gse.rutgers.edu) when you need to contact me. The use of the gse account will allow me to keep better track of our exchanges.

Projects

Students will notice that 75% of the grade for the course will be based on participation, a set of projects, and two homework assignments. Therefore, good attendance is imperative for this course. In order to do well with these tasks, it is necessary to follow instructions for each one *exactly* as it is described. (Failure to do so will result in the loss of points.) The directions for each project will be available in Doc Sharing on ecollege. The directions for each assignment will include a grading scheme/rubric that identifies what I will be looking for when I assess a project.

Slides

The slides for each class meeting's lecture will be uploaded to ecollege several days before the class meeting. They will often address issues that are not discussed in the readings. You are responsible for understanding that information as well.

Focus Questions

A set of focus questions will be uploaded to ecollege several days prior to a class meeting. These questions highlight what you are expected to understand for a specific class. The mid-term and final exams will be based on these focus questions.

Exams

25% of your grade will be based on a mid-term and final exam. These exams will measure your knowledge of basic course information, concepts, and ideas. If you stay current with readings and review the readings and notes regularly, you should perform well on them.

Supplies

You will need two USB flash drives. *Please be sure that each one is labeled clearly with your name.* You will need these two drives to backup your work. (Any work that you

save on a computer in the lab is subject to deletion.) Keep in mind that there is policy for late work. If you lose work because it was not backed up, the late policy will NOT be waived.

REMEMBER: YOU NEED TWO FLASH DRIVES! (Last semester a student did not heed this requirement. The student misplaced his/her flash drive and lost many points for submitting the assignment late.)

Class Format

This course will employ a variety of instructional formats including lectures, discussions, student presentations, and hands-on computer activities.

The typical class meeting will be divided into three parts. Up to the first half-hour of each class session will be devoted to learning the basics of Scratch. (Scratch is a programming language.) The second part of a class will usually be devoted to discussions, lectures and/or in-class tasks. The last part of a class meeting will be for lab work.

Attendance

Students are expected to attend all classes; if you expect to miss one or two classes, please use the University absence reporting website <https://sims.rutgers.edu/ssra/> to indicate the date and reason for your absence. An email is automatically sent to me.

How You Earn Your Grade

This course employs a point system.

| Grade | Points |
|-------|----------|
| A | 90 - 100 |
| B+ | 85 - 89 |
| B | 80 - 84 |
| C+ | 75 - 79 |
| C | 70 - 74 |
| D | 60 - 69 |
| F | > 60 |

| Assignments/Exams | | | | |
|--|--------------|------------|------------|---------------|
| <i>Task/Exam</i> | <i>Start</i> | <i>End</i> | <i>Due</i> | <i>Points</i> |
| Project 1/Database | 9/1 | 9/29 | 10/6 | 15 |
| Mid-term exam | NA | NA | 10/20 | 10 |
| Project 2/WebQuest | 10/6 | 10/20 | 10/27 | 15 |
| Homework 1 | 9/22 | NA | 10/6 | 5 |
| Homework 2 | 11/3 | NA | 11/17 | 5 |
| Project 3/Scratch | 10/27 | 11/22 | 12/22 | 15 |
| Group Presentations* | 11/3 | 11/22 | 12/1 | 10 |
| Final exam | NA | NA | 12/8 | 15 |
| Class Participation | Ongoing | | NA | 10 |
| *A small number of presentations might be done on 12/8, depending on the number that we complete on December 1 | | | | |

| Readings/Lecture/Discussions/Lab Work* | | | | |
|--|-------------|--|--------------|------------|
| Mtg. | Date | Topic | Rdgs. | Lab |
| 1 | 9/1 | Introduction/Educational Technology/Computer Basics/Internet | ecollege | DB |
| | 9/8 | No class meeting (university schedule change) | NA | NA |
| 2 | 9/15 | Teaching, Learning, & 21 st Century Skills | ecollege | DB |
| 3 | 9/22 | Active Learning and Technology | ecollege | DB |
| 4 | 9/29 | Technology and Planning and the Standards | ecollege | DB |
| 5 | 10/6 | Teaching & Learning w/Educational Websites | ecollege | WQ |
| 6 | 10/13 | Distance Education/E-Learning | ecollege | WQ |
| 7 | 10/20 | Learning with Multimedia | ecollege | WQ |
| 8 | 10/27 | Professional Development and Internet Resources | ecollege | SCR |
| 9 | 11/3 | Technology and Assessment | ecollege | SCR |
| 10 | 11/10 | Designing presentations/Wikis and Blogs | ecollege | SCR |
| 11 | 11/17 | Visual Learning/Literacy | ecollege | IN |
| 12 | 11/22 | Universal Design for Learning (Tuesday) | ecollege | SCR |
| | 11/24 | Happy Thanksgiving! | NA | NA |
| 13 | 12/1 | Group Presentations | NA | NA |
| 14 | 12/8 | Group Presentations/Final Exam | NA | NA |
| 15 | 12/22 | Wrapup | NA | NA |
| SCR = Scratch/DB = Database/IN = Inspiration/WQ = WebQuest | | | | |

Policies

Class Attendance: Attendance at all regularly scheduled classes is required, and attendance will be recorded at the **end** of each class meeting. This requirement is in keeping with University Policy on attendance.

Ecompanion: I have established an ecompanion site (<https://ecollege.rutgers.edu/index2.jsp>) for this course. This site will contain a variety of resources for you. These resources include the syllabus, assignments, design guidelines, tools, readings, and educational standards. These resources will be found by clicking on the Doc Sharing tabs within ecompanion.

Missed Classes: It is your responsibility to get notes or other materials from **another student** if you miss class. Do not contact me for this material.

Make-Ups: A make-up quiz or exam will be allowed **ONLY** if you miss one because of religious observance, a properly documented illness, family emergency, or other situation covered by the University attendance policy. If your religious obligations result in absence for an exam or other evaluative activity, *you must inform me prior to the examination.*

Assignments: Assignments must be submitted on time. No excuse will be accepted for work that is submitted late. An automatic 5-point deduction will be assessed for late work.

Email: From time-to-time class members will receive notices through ecompanion. Such emails will be sent to the email accounts that ecompanion lists for students. (I will NOT attempt to send emails to other email addresses.) Although I do not intend to send many emails, I suggest that you check that account periodically to look for anything from me.

It would be wise on your part to check your email a couple of hours before each class meeting. Although I have missed class meeting only rarely for emergencies, the possibility always exists. If such an emergency arises, I will do my best to notify you by email of my absences so that you do not make a trip to the GSE for naught.

Also, students occasionally contact me for various reasons via email on the day of a class meeting. Please keep in mind that I do not always have the opportunity to check my email during the daytime hours, and it is very possible that I will not see such emails.

Classroom Culture and Participation: This instructor expects students to be prepared for class meetings. Preparation includes familiarity with readings, a completed reading reaction sheet, and any work necessary to engage in lab work. Participation also includes support for a classroom environment that is conducive to and respectful of teaching and learning.

Here are a couple of tips to promote a positive classroom culture and participation. First, please turn off all cell phones during class. If there is a reason why your cell phone must be active (e.g., parental responsibilities), please notify me. Second, the fact that students are sitting in front of computers tempts some of them to check email, read blogs, or visit sites of personal interests. Avoid that temptation. Failure to meet these simple expectations will result in a zero for class participation.

Course Projects/Homework Assignments

Overview

The domain of education and computers is so vast that there is no way that students in a course could actually engage in or encounter more than a fraction of the various programs, instructional strategies, and computer-based tools that they meet in their readings and class discussions. It is important, however, that pre-service teachers do develop skills, concepts, strategies, and approaches to computer-based technologies through direct interaction that can be fruitfully applied in educational settings. The projects and assignments are designed to provide students with experiences that will comply with the NJCCCS and/or NETS-T and NETS-S. In addition to the project, students will be required to write a paper in which he or she denotes which areas of NJCCCS the project addressed.

Nutshell Descriptions of Projects and Assignments

A full, specific description for each project or assignment listed below will be found on the course ecompanion site. A grading grid/rubric will also be provided for each project or assignment so that students can plan, evaluate, and monitor their efforts with each project or assignment.

Lab Projects

There will be three lab projects for this course. We will devote approximately four weeks of lab work to each one. During the four weeks devoted to each project students will have time to learn the basics of each program, propose and design a project using each program, and to consult with the instructor and other students. Each project will be due two weeks after the conclusion of the lab work portion of the project.

1. Database Project: Each student will create a database that can support his or her duties in an educational setting. For example, a teacher might want to have a database that contains titles of picture books that he or she uses for a literacy program and story time. The books might be categorized by genre, location of the library from which it is accessed, situations for which the book might be most suitable (e.g., holidays), and so on.
2. WebQuest: WebQuests will be defined and explored at class meetings. Each student will learn how to make a WebQuest using Google Docs.

3. **Scratch Project:** Scratch is a computer program (designed to be used with students as young as middle school level) that supports 21st Century Skills. Each student will create a functioning Scratch program.

Homework Assignments: There will be two homework assignments in which students will engage in assignments based on topics in education and computers.

Team Project/Presentation

Issues in Computers and Education: Students will work in teams of three to four members to deliver a presentation related to issues in the use of computers in education.

New Jersey Professional Teaching Standards

This course addresses these areas of the standards:

Knowledge

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;
- 2.2 How student learning is influenced by individual experiences, talents and prior learning, as well as language, culture, family, and community values; and
- 2.3 How to identify and teach to the developmental abilities of students, which may include learning differences, visual and perceptual differences, cultural and socio-emotional differences, special physical or emotional challenges and gifted and talented exceptionalities.
- 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; and
- 4.4 A variety of instructional approaches and the use of various technologies, to promote thinking and understanding.
- 8.1 The power of communication in the teaching and learning process.

Dispositions

Teachers value and are committed to:

- 2.4 The educability of all children and adolescents;
- 2.5 The belief that all children and adolescents bring talents and strengths to learning;
- 2.6 Appreciation for multiple ways of knowing;
- 2.7 The diverse talents of all students and to helping them develop self-confidence and subject matter competence; and
- 2.8 The belief that all children and adolescents can learn at high levels and achieve success.
- 3.5 Respect for individual and cultural differences, and appreciation of the basic worth of each individual and cultural group; and
- 3.6 The diversity of learning that takes place in the classroom, respect for the talents and perspectives of each student and sensitivity to community and cultural norms.
- 4.5 The development of students' critical thinking, independent problem-solving and performance capabilities.
- 5.3 The belief that students' strengths are the basis for growth and their errors are opportunities for learning.
- 7.3 The belief that children and adolescents with special needs can learn at high levels and achieve success.

Performances

Teachers apply:

- 2.9 Learning theory to accommodate differences in student intelligence, perception,

cognitive style and achievement levels.

3.7 Create a learning community in which individual differences are respected;

3.8 Learn about the diverse students they teach, and the students' families and communities;

3.9 Use strategies to support the learning of students whose first language is not English; and

3.10 Use knowledge of students and their lives to design and carry out instruction that builds on students' strengths while meeting their needs and taking into account issues of social class, gender, race, ethnicity, language, sexual orientation, age and special needs.

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

4.7 Plan instruction based on knowledge of classroom, school and community culture;

4.8 Evaluate teaching resources and curriculum materials for their comprehensiveness, accuracy and usefulness for representing particular ideas and concepts;

4.9 Identify strategies to create learning experiences that make subject matter meaningful for students, address a variety of learning styles, encourage students to pursue their own interests and inquiries and help students connect their learning to personal goals;

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