UNIVERSITY OF MARYLAND

## Students, Learning, and Technology

# EDUC 275: Learning Environments for the 21st Century

## Syllabus


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| **Instructor:** | Davina Pruitt-Mentle |
| **Support:** | Educational Support Services & GA/TA<br>Jiyeun Sung and Carla Doernberg |
| **Office:** | 2127 Tawes |
| **Phone:** | (301) 405-8202 |
| **Email:** | dpruitt@umd.edu<br>sungalic@yahoo.com and<br>carla629@umd.edu |
| **Website:** | http://www.edtechoutreach.umd.edu/ |
| **Credits:** | 3 credits |
| **Time:** | Three weeks - *Young Scholars Program*<br>Monday-Friday 9:00 - 3:00; Open Lab time in the afternoon |


**Course Catalog Description:**

Explore skills essential to college success: technology fluency and applications, team building, collaboration tools, problem based critical thinking, through MicroWorlds, ICONS, educational games and simulations, TappedIn, MOOS, Blogs and RoboLab. Students participate in cutting-edge technology projects, robotic activities, Logo-based computer learning environments, gaming, modeling, simulations, and development of IT entrepreneurial ideas, while investigating exciting careers that interconnect the fields of education and technology.

**Course Description:**

New technology is creating growth and opportunities in fields ranging from teaching to communications, geology to space science, and cryptography to computer forensics. Looking into the future, it is imperative that students are trained in key 21st century skills which will help them play a part in these fields and others, succeed in college, and prepare themselves with the skills necessary to meet the shifting demands of the future workplace.

The rapidly changing workplace is just one reason to consider opportunities in the field of education. A degree in education provides you with a broad range of job opportunities. An undergraduate degree in education is one of the best preparations to enter employment fields

which are constantly changing or even some that do not yet exist. Graduates of education live and work throughout the world. You will find teachers and administrators, human resource managers, corporate trainers, continuing educators, technical instructors, computer programmers and trainers, analysts, engineers, entrepreneurs, professors, lawyers, museums curators of education, community outreach directors, and industrial researchers to name just a few.

The **2006 Young Scholars Program, *Students, Learning, and Technology*** will allow students to explore and expand their knowledge of essential 21st century skills (technology fluency and applications, team building, collaboration tools, problem based critical thinking), while also exposing them to real-life instances of professionals using these skills in exciting careers that interconnect the fields of education and technology. This course provides a means to explore technology applications essential to college success, as well as opportunities to investigate career possibilities that utilize technology. ***Students, Learning, and Technology*** **will provide three weeks of dynamic and challenging activities through a variety of computer applications and *Logo-based* computer learning environments - and all while having fun!**

*The underlying philosophy of Logo links pedagogy to programming in a tight bond. Logo's central theme is that the journey is the reward. The act of creating a program from scratch and debugging it is where the learning takes place. Once a Logo task is complete, the learner has accomplished two things: -not only created a working program, but also, and more important, has developed or refined problem-solving strategies that can be applied to other tasks, whether computer-related or not.* (David Thornberg, *The Philosophy of Logo: the Most Important Attribute*)

Field trips and guest speakers will show how programming and various technology-based applications are used in the modern work environment. Workshops will be hands-on and project-based aimed at learning the thought processes behind solving modern problems. Morning sessions will give students a chance to explore different technology applications (Word, Excel, PowerPoint, Inspiration). Participants will explore, design, build, program, experiment and develop projects using one or more Logo-based computer learning environments (i.e. MicroWorlds™, LEGO® Mindstorms™/Roblab™, Squesk, ICONS, StarLogo). Afternoon team activities will focus on designing, building and programming cybernetic devices via the LOGO language and LEGO Mindstorms robotic construction kit. Students are exposed to other online formats (WebCT, TappedIn, Wiki & Blogs, MOO Crossing) via their course activities and discussion. Students need only general computer awareness (basic keyboarding skills). As a culminating activity, student work and reflections will be incorporated into an E-portfolio.

**Course Format:**

***When:*** The course will meet Monday through Friday from 9:00 AM- 3:00 PM (9-2:00 work and 2-3:00 open lab time with GA/TA), with a one-hour lunch break (exceptions may occur with away field trips). There will also be mid-morning and mid-afternoon breaks. Time will also be available for open lab work before class and in the afternoons.

***Where:*** IBM Computer Teaching Lab, Benjamin Building - College of Education.

***What:*** The format is hands-on and learner-centered designed to foster collaborative research and inquiry. Generally, the morning session will focus on computer/technology applications (word processing skills, creating games, animated stories, and multimedia presentations). The afternoon team activities will focus on programming concepts utilizing the LOGO language and LEGO Mindstorms robotic construction kit. The culminating activity will be the development of an e-portfolio.

**Course Process**

**Objectives:** **Students will:**

- focus on **inquiry and group** based methods of learning;
- **collaborate** with peers to adapt/redesign problem materials;
- experience **problem based learning** through active engagement in an appropriate activity;
- know the **elements of problem solving**, including key content identification, scientific literacy, habits of mind, and critical thinking and learning events involved in project development;
- **provide and accept feedback** gracefully (to and from other participants and instructors);
- **actively participate** in all class field trips;
- **actively participate** in class discussions;
- be a **reflective learner**.

**Product**
**Students will:**

- understand, utilize and experience **skills needed** for the 21st century workforce and/or higher education opportunities
- explore and use a **variety of technology/computer applications**;
- use technology to **explore and design** multimedia presentations, simulations, and distance learning environments
- design Logo environments (games, animated stories, and interactive multimedia presentations)
- **build and program** cybernetic devices to perform a specific task;
- **keep an electronic journal** of reflections and experiences;
- design and present an **e-portfolio** highlighting projects and experiences.
- design and present **individual**, and one **collaborative LOGO programmed** projects
- collaboratively build an **on-line class simulation**
- actively participate in several **on-line environments**

**Readings:** Readings can be viewed/downloaded from the WebCT & ETO course sites (www.edtechoutreach.umd.edu & WebCT)

**Course Expectations and Procedures:**

1. It is assumed that all students will participate in class sessions (face-to-face and virtual, as well as all field trips), as discussions and shared experiences are key components of this course.
2. Completion of assigned tasks and readings prior to each class is required in order to facilitate student learning.

    - Take the Online Self-Assessment Survey - http://www.vto.vt.edu/survey.php

3. All students will complete assignments in a timely fashion, contribute substantively to class discussions, and as appropriate, prepare critiques of research, readings, and class efforts.
4. All students will present themselves professionally during class times, with guest speakers and while attending field trips. **Appropriate dress is required for all fieldtrips.**
5. The University of Maryland has a tradition of honor in conduct and academic endeavors among its students. Information regarding the Honor Code and expectations of students may be found at: http://www.jpo.umd.edu/aca/FAQ.html
6. Participation in all class discussions is required, expected and necessary. The grading rubric for the course is based on expectations of quality, timeliness and participation.
7. **If you have a documented disability and wish to discuss academic accommodations please contact me as soon as possible.**
8. Students missing the deadline for an assignment must make immediate arrangements with the instructor to fulfill that requirement before the next class session.
9. Please carefully edit all written assignments. For more information, see Writing and Editing Hints - see http://curry.edschool.virginia.edu/class/edis/771ce/lynch003/edit.html
10. The citation style employed should be accurate, acceptable, and recognizable (MLA, Chicago (15th ed.) or APA (5th ed.) practice. The American Psychological Association (APA: http://www.apa.org ) style of citation is preferred. For quick basics, visit:

    - University of Maryland - http://www.lib.umd.edu/groups/learning/onlinewriting.html
    - Columbia University Press - http://www.columbia.edu/cu/cup/cgos/idx_basic.html
    - Harvard Writing Center Resources - http://www.fas.harvard.edu/~expos/index.cgi?section=resources
    - Purdue's Online Writing Lab (OWL) - http://owl.english.purdue.edu/
    - Rensselaer polytechnic Institute Writing Center - http://rpi.edu/web/writingcenter/handouts.html
    - University of Wisconsin-Madison Writing Center - http://www.wisc.edu/writing/

**Instructor Responsibilities**

Just as we have high expectations for students, we also have high expectations for ourselves. Students should expect that the instructor for this course will:

1. Be prepared for class, read and return students' work in a timely manner, and be interested and engaged in students' work;
2. Remember that each student brings different background

knowledge about both content and online experiences to this course, as well as help students develop their personal interests whenever possible;

3. Help students identify sources of additional substantive and methodological expertise, as needed;
4. Meet with students individually or in groups upon request and be available in person, by telephone, and by email to answer questions; and
5. Work hard, have fun and empower students to plan and engage in high quality discussions and experiences.
6. Email with students is not always a low threshold technology. Students sometimes feel that faculty/instructors should be available to answer questions 24/7 or whenever the student is online. This expectation of an immediate response can occasionally create a negative communication environment. Students' emails can also add significantly to faculty/instructor workload. While my past performance has indicated that I return emails promptly (sometimes to students surprise within minutes), in order to eliminate the possibility of problems due to assumptions, the following is the course minimal guideline: All emails will be answered within 24 hours of receipt except on weekends (begins after 4:00 on Friday)-which may take longer. I do however; HIGHLY recommend that you send emails whenever a question arises, while the above is only a statement of minimal expectations on my part.

**Grading Policy:** Grades will be based on the completion of course requirements and on the scope, quality and creativity of the papers/projects. The extent and quality of participation in course interactions (face to face and virtual) will also be factored into determining the final course grade.

40% Preparation and participation in discussions (face to face and on-line), activities and field trips.
25% In-class mini activities and mini-assignments
20% Product Based Team and Individual Activities
15% Individual e-portfolio

The evaluation criteria for this course are described in more detail in the grading rubric which will be presented and discussed in class.

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