



# UNIVERSITY OF MARYLAND

## ***Learning Environments for the 21<sup>st</sup> Century: Students, Learning, and Technology***

### **SYLLABUS**

<b>Instructor:</b>	Davina Pruitt-Mentle
<b>Support:</b>	Educational Support Services/Graduate Assistants
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<b>Website:</b>	<a href="http://www.edtechoutreach.umd.edu">www.edtechoutreach.umd.edu</a>
<b>Credits:</b>	3 credit
<b>Time:</b>	Three weeks- <a href="#"><i>Young Scholars Program</i></a>

#### **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, simulations, [TappedIn](#), [MOOS](#), Blogs and RoboLab. Investigate and visit professions 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 21<sup>st</sup> 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 2005 Young Scholars Program, *Students, Learning, and Technology* will allow students to explore and expand their knowledge of essential 21<sup>st</sup> 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, Access, PowerPoint, Inspiration, Kidspiration, Microsoft Project). Participants will explore, design, build, program, experiment and develop projects using one or more Logo-based computer learning environments (i.e. MicroWorlds™ Terrapin Logo™). Afternoon team activities will focus on designing, building and programming cybernetic devices via the LOGO language and LEGO® Mindstorms™ robotic construction kit. 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 9:30 AM- 3:30 PM, with a one-hour lunch break. There will also be mid-morning and mid-afternoon breaks.

**Where:** IBM computer 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 (web page design, 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 Objectives:**

##### **Process**

##### **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:**

- explore and use a variety of technology/computer applications;
- use technology to explore and design multimedia presentations;
- design Logo environments (games, animated stories, and interactive multimedia presentations);
- build and program cybernetic devices to perform a specific task;
- keep a journal of reflections and experiences;
- design and present an e-portfolio highlighting projects and experiences.

**Readings:** Course Packet.

Other readings can be viewed/downloaded from the WebCT & ETO course sites  
([www.edtechoutreach.com.umd.edu](http://www.edtechoutreach.com.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. 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.
3. All students will present themselves professionally during class times, with guest speakers and while attending field trips.
4. 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>
5. 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.
6. **If you have a documented disability and wish to discuss academic accommodations please contact me as soon as possible.**
7. Students missing the deadline for an assignment must make immediate arrangements with the instructor to fulfill that requirement before the next class session.
8. Please carefully edit all written assignments. For more information, see Writing and Editing Hints - <http://curry.edschool.virginia.edu/class/edis/771ce/lynch003/edit.html>.
9. The citation style, when needed, should be accurate, acceptable, and recognizable practice (MLA, Chicago or APA). The American Psychological Association (APA) style of citation and referencing is preferred. For quick basics, visit:
  - a. UMCP reference site [http://www.lib.umd.edu/UES/library\\_guides.html](http://www.lib.umd.edu/UES/library_guides.html)
  - b. Purdue Owl Lab <http://owl.english.purdue.edu/workshops/hypertext/APA/index.html>
  - c. Columbia University Press - [http://www.columbia.edu/cu/cup/cgos/idx\\_basic.html](http://www.columbia.edu/cu/cup/cgos/idx_basic.html)
  - d. Columbia Guide to Online Style/ACW style "help sheets"- <http://www.cas.usf.edu/english/walker/mla.html>

**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% Project Based Group 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.

## References:

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- Braitenberg, V. (1984). Vehicles, Cambridge, MA: MIT Press.
- Career info <http://www.acinet.org/acinet/>.
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- Sargent, R., et. al. (1995, spring). Building and learning with programmable bricks. Logo Update On-line. Retrieved September 13, 2002 from <http://el.media.mit.edu/logo-foundation/pubs/logoupdate/v3n3.html#brick>
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