



Innovation and Technology for Teaching & Learning  
MEDEDU 2230  
March 3 – April 28, 2008

COURSE DIRECTOR: James B. McGee, MD  
LOCATION: 305B Parkvale Building  
TIME: Monday & Friday 3:00-5:00 PM  
March 3 – April 28, 2008  
CREDITS: 2  
GRADES: Letter Grades  
Class & Online Participation 40%  
Project 60%

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Zone Websites: <http://zone2.medschool.pitt.edu/MEDEDU2230-2008>  
Blackboard Website: <http://courseweb.pitt.edu>

Course Description: This course is intended to enable students to understand how technology and curricular innovations are successfully developed, implemented and assessed in a medical education environment. This objective is achieved through interactive symposia, small group discussion, mentoring, demonstrations and field trips. Each student engages in active learning through the preparation, discussion, critique, and presentation of a proposal for an education innovation project.

As part of the hands-on learning, this course uses web-based learning technologies to communicate and prepare assignments. Students will review and critique each other's work throughout the project proposal development cycle.

The course didactic components consist of a balance of reading assignments, local and guest speakers via teleconference, and online resources.

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<b>Date</b>	<b>Topic</b>	<b>Assignments (prior to class)</b>
Mon Mar 3	Introduction, structure and expectations Online learning resources and tools Introduction to course project	
Fri Mar 7 ** 3-4:00pm	Basic Science of Education Technology Discuss reading assignments	AAMC; <i>Educating Doctors...</i> AAMC; <i>Effective use of Educational Technology...</i> Spencer; <i>Learner centered approaches...</i>
Mon Mar 10 ** 3-4:00pm	Technology for Education; now and the future Discuss reading assignments	Ruiz: <i>Impact of E-Learning on Medical Education...</i> Harden: <i>Trends and future of postgraduate medical...</i>
Fri Mar 14	Getting an innovation started Discussion of proposal structure, abstract, timelines	Review Innovation Award documents (RFP, Budget, Evaluation). Review previous awards (all on website: <a href="http://www.pitt.edu/~facaaffs/acie/awards.html">http://www.pitt.edu/~facaaffs/acie/awards.html</a> )
Mon Mar 17	Activity: Each student will briefly present his/her idea for an innovation project; others will critique and offer advice.	Be ready to present and share abstracts; bring copies of abstract for others (7 total)
Fri Mar 21	Guest Lecture: Technology for Continuing Medical Education (Barbara Barnes) Review abstracts with Dr. Barnes	Reading: TBA Be ready to discuss abstracts
Mon Mar 24	Education Technology at the School of Medicine Planning and managing a Project; view from the trenches (Peter Kant)	Complete project worksheet prior to class
Fri Mar 28	CIDDE Field Trip ** Location: Faculty Instructional Development Lab (FIDL), B-level (basement) Alumni Hall, Room B-23 4227 5 <sup>th</sup> Avenue	
Mon Mar 31	Simulation in Education WISER field trip ( <a href="http://www.wiser.pitt.edu">www.wiser.pitt.edu</a> ) 230 McKee Place, Suite 300, 3 <sup>rd</sup> floor	Morgan: <i>Simulation technology review...</i> Vozenilek; <i>See one, do one teach one...</i>
Fri Apr 4	Web-based education Proposal discussion, #1, 2 and 3	Cook; <i>A practical guide to developing web-based learning...</i>
Mon Apr 7	Impact of Technology on Education Proposal discussion, #4, 5, and 6	(check website)
Fri Apr 11	Guest lecture (TBA)	Work on proposal
Mon Apr 14	A Vision of Students of Tomorrow Last proposal discussion (all)	Work on final proposal and presentation
Fri Apr 18	Present Proposals #1, 2 and 3	Work on final proposal and presentation
Mon Apr 21	Present Proposals #3, 4 and 5	
Fri Apr 25	Guest Lecture: Carla Spagnoletti, M.D.	Spagnoletti: <i>Teaching Obstetric Medicine to IM Residents...</i>
Mon Apr 28	No class	

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## Course Learning Objectives

Upon successful completion of this course participants will be able to,

1. Describe the core technologies used in medical education today.
2. Assess the value of learning technologies for medical education and apply to educational needs.
3. Design and plan an innovation project for medical education, including project justification, methods, budget, implementation and assessment.

## Course Structure

Knowledge: traditional didactic presentations; primary and review literature

Project-based Learning: each student writes a (mock or real) proposal for a technology-based innovation in education

Group Learning: discuss literature; discussion of project proposals

Experiential Learning: field trips to the WISER simulation center and CIDDE

## Resources

1. Blackboard website: <http://courseweb.pitt.edu>
2. American Association of Medical Colleges (AAMC) website: [www.aamc.org](http://www.aamc.org)

## Members

**James B. McGee** (course director), [mcgee@medschool.pitt.edu](mailto:mcgee@medschool.pitt.edu)

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**Required Project:** Write and present a Project Proposal for a technology-based educational innovation

### Introduction

As a required exercise for the Innovative Teaching Strategies course you will write a proposal for a new technology-based educational innovation. This active learning project is intended to give you a chance to synthesize what you learn throughout this course and incorporate some of the knowledge and skills you have acquired in your other courses. This activity accounts for 60% of your final grade.

### Objectives

1. Acquire a broad understanding of the use of technology in education including how the various components and stakeholders must work together
2. Develop a complete, beginning to end, perspective of what is required to develop and implement an educational innovation
3. Synthesize technology capabilities with educational concepts
4. Be able to critically and objectively evaluate your innovation and those of others

### Instructions

Please see the examples from previous students and the Provost's Advisory Council on Instructional Excellence RFP (request for proposals) for specific instructions and guidelines on developing your proposal. The scope of your project should focus on a technology-related innovation rather than any educational program as stated in the RFP.

Format will be similar:

1. Cover sheet – title, abstract, duration, funds requested (signatures are not required)
2. Project director(s) biographical sketch(es) (1/2 page maximum)
3. Body – this should include a hypothesis, rationale, methods description, impact on education, sustainability, and evaluation (success criteria) – it should also include what local and outside resources will be required to develop and sustain the project
4. Budget – this does not have to be precise for this exercise but should reflect the relative cost of doing the project

Suggestions

- Begin by discussing your idea with your colleagues and course faculty
- Take advantage of the faculty and students in this course by soliciting feedback during class time and online
- Research the web, medical and educational literature for similar examples and reports on methods, success and failure

Please contact the course director (McGee) if you have any questions.

## **SYLLABUS – MEDEDU 2230, Innovation and Technology for Teaching and Learning**

**Monday March 3, 2008**

**3:00 – 5:00 PM**

### **Introduction**

#### **Topics/Objectives**

1. Introduction, structure and expectations
2. Become familiar with online learning resources and tools
3. Introduction to course project

#### **Activities**

1. Introductions
  2. Review of Blackboard and Zone web resources
    - a. Blackboard: <http://courseweb.pitt.edu>
    - b. Zone: <http://zone2.medschool.pitt.edu/MEDEDU2230-2008/>  
Use "UPITT-USERS\pitt email" name to log in and the same password  
Select preferred email
    - c. See Zone site for additional web resources
  3. Set personal learning goals for the course; document on Zone website
  4. Review expectations
    - a. Complete assignments before class
    - b. Be prepared to discuss readings
    - c. Engage in discussion; you will be graded on participation both in-person and online
    - d. Complete course project with a written proposal for an educational innovation
    - e. Attend required fields trips
  5. Briefly review course project, more detail will be covered later in the course
  6. Lecture: Introduction to Education Technology
  7. Discussion
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**Friday March 7, 2008**

**3:00 – 4:00 PM**

### **Basic Science of Education Technology**

#### **Preparation** (download from websites)

1. AAMC – Educating Doctors
2. AAMC – Effective use of educational technology
3. Spencer – Learner-centered approaches

#### **Topics/Objectives**

1. Review the core components or anatomy of educational technology: hardware, software, human resources, facilities, etc.
  2. Recognize how the principles of educational theory can be used to develop technology applications that are effective and meet learner and curricular needs.
  3. Understand the principles of needs assessment and how they relate to education technology.
  4. Explain the significance of scalability and sustainability.
  5. Select the appropriate assessment mechanism for a technology project.
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**Monday March 10, 2008**  
**3:00 – 5:00 PM**

### **Technology for Education**

This session will review the current state of the art in education technology using examples. Group discussion will incorporate the required readings and a review of the relevant websites.

#### **Preparation** (download from websites)

1. Harden-Trends and the future of postgraduate medical education
2. Ruiz-Impact of E-Learning

#### **Activities**

1. Lecture: Technology for Education: now and the future (McGee)
  2. Discuss lecture and reading assignments
  3. Orientation on Innovation Award documents
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**Friday March 14, 2008**  
**3:00 – 5:00 PM**

### **Getting an Innovation Started**

This session will use the University's Innovation in Education Award as a model for proposing an educational technology project. Each student will create a (mock) proposal, roughly according to the guidelines for the Innovation Award. A lecture will review recommended steps and strategies toward conceiving, planning and proposing a technology project.

#### **Preparation**

1. Download Innovation Award documents (3) from course website.
2. Read the Innovation Award RFP (request for proposals). The budget and assessment documents are for later use.
3. Visit the Innovation Award website at <http://www.pitt.edu/~facaffs/acie/awards.html> and familiarize yourself with the University's program.
4. Read about the most recent awarded projects via the "Year 2007 Awards Projects" (Teaching Times issue) link on the above page.

#### **Activities**

1. Lecture: Getting an Innovation Started (McGee)
  2. Review Innovation Award RFP
  3. Discuss key steps in project selection and initiation.
  4. Discuss personal project ideas and how you can get started.
  5. Review preparation of abstract and expectations for next session.
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**Monday March 17, 2008**  
**3:00 – 5:00 PM**

### **Review Project Abstracts**

Students will each present their abstracts for their class project. The group will provide constructive feedback and guidance on each project.

#### **Preparation**

1. Review previous projects by former Innovation in Teaching & Learning students

2. Prepare project abstract:
  - a. Title
  - b. Describe educational problem or opportunity
  - c. Hypothesis, Objective or Goal
  - d. Description of methods
  - e. Description of expected outcomes

#### **Activities**

1. Present project abstract. Each student as 20 min each, including discussion.
  2. Review plans for next four sessions.
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**Friday March 21, 2008**

**3:00 – 5:00 PM**

#### **Technology in Continuing Medical Education**

Dr. Barbara Barnes will conduct this session. She previously was co-course director for this course and is the Assistant Vice Chancellor for Continuing Education in the Health Sciences and Associate Dean for CME. She has pioneered and championed educational innovation in CME here at Pitt and nationally.

#### **Preparation**

1. Check course website for reading assignments, if any
2. Be prepared to discuss abstract and progress on your project

#### **Activities**

1. Lecture: Technology in Continuing Medical Education (Barbara Barnes)
  2. Discuss abstracts and progress with Dr. Barnes.
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**Monday March 24, 2008**

**3:00 – 5:00 PM**

#### **Education Technology at the School of Medicine**

Peter Kant will conduct this session. Mr. Kant is currently the Director of Production for the Laboratory for Educational Technology at the University of Pittsburgh. There he directs a team for education professionals and programmers who develop educational programs for the medical students, trainees and professional healthcare providers. He will review the Lab's approach to education technology by way of examples of real-life programs. In addition, he will share his approach to project planning and management, including newer approaches such as "agile programming."

#### **Preparation**

1. Download and complete the Project Worksheet form (this will be on the course website prior to 3/21/2008) based on your class project.
2. Check website for additional reading assignments

#### **Activities**

1. Lecture: Education Technology at the School of Medicine (Peter Kant)
  2. Lecture: Planning and Managing a Project: view from the trenches (Peter Kant)
  3. Share project worksheet results in relation to your project proposal.
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**Friday March 28, 2008**  
**3:00 – 5:00 PM**

**LOCATION: FIDL (faculty instructional development lab), Alumni Hall 4227 5<sup>th</sup> Avenue, room B-23 (basement)**

### **CIDDE Field Trip**

This session will be conducted by the Center for Instructional Design and Distance Education, led by Nicholas Laudato, Associate Director of Instructional Technology for CIDDE (<http://www.pitt.edu/~laudato/>). Mr. Laudato has long and extensive experience in technology support of education and has led the University's efforts in this area through development of innovative programs and strong faculty support.

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**Monday March 31, 2008**  
**3:00 – 5:00 PM**

**LOCATION: WISER Center, 230 McKee Place, Suite 300 (3<sup>rd</sup> floor)**

### **Simulation in Education**

This session will be held at the WISER center for simulation and led by Dr. Paul Phrampus the director of the center. The methods and educational theory underlying simulation for medical education will be reviewed along with a tour of the facilities. He will focus on how simulation can be applied to educational challenges in various settings and for different audiences. This will include using simulation to teach clinical skills and assessment of competency.

#### **Preparation**

1. Readings (on course websites)
    - a. Morgan – Simulation technology in training students, residents and faculty
    - b. Vozenilek – See One, Do One, Teach One: Advanced Technology in Medical Education
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**Friday April 4, 2008**  
**3:00 – 5:00 PM**

### **Web-based Education**

This session will focus on how web technologies can enhance education. It will include a review of both traditional and emerging web-based technologies.

#### **Preparation**

1. Readings: Cook – A Practical Guide to Developing Effective Web-based Learning
2. Be ready to discuss proposal progress

#### **Activities**

1. Lecture: Web-based Education (McGee)
  2. Discuss proposal progress, #1, 2 and 3
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**Monday April 7, 2008**  
**3:00 – 5:00 PM**

**Impact of Technology on Education**

This session will review how technology can affect learning in both positive and negative ways. Approaches to assessing an innovation prior to and after implementing will be reviewed.

**Preparation:** check website for updated reading assignments

**Activities:**

1. Lecture: Impact of Technology on Education
  2. Discuss proposal progress, #4, 5 and 6
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**Friday April 11, 2008**  
**3:00 – 5:00 PM**

**Guest Lecture to be announced**

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**Monday April 14, 2008**  
**3:00 – 5:00 PM**

**A Vision of Students of Tomorrow**

This session will try to predict the future of education and how technology may help meet the changing demands, needs and opportunities of future students.

**Preparation:** Please use time this week to prepare for the final presentation of your proposal to the class. No reading assignments this week.

**Activities**

1. Lecture: A vision of students of tomorrow (McGee)
  2. Last proposal discussion, for any last-minute questions for the group
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**Friday April 18, 2008**  
**3:00 – 5:00 PM**

**Present Proposals #1, 2 and 3**

Students will each have 20 minutes to present their proposal to the class followed by discussion and critique. They will turn in the full written version to the course director.

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**Monday April 21, 2008**  
**3:00 – 5:00 PM**

**Present Proposals #4, 5 and 6**

Students will each have 20 minutes to present their proposal to the class followed by discussion and critique. They will turn in the full written version to the course director.

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**Friday April 25, 2008**  
**3:00 – 5:00 PM**

**Guest Lecturer: Carla Spagnoletti, M.D.**

Dr. Spagnoletti is a former student in this course and will relate her experience with her own education technology project, related research and subsequent publication of her findings.

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**Monday April 28**

**NO CLASS SCHEDULED**