

PTED 7281-06**INDEPENDENT PROJECT:****LF08 MATHEMATICS & TECHNOLOGY**

Semester Hours: 3

Semester/Year: Summer/2008

Course:

Days and Time:

Face-to-Face Meeting:

Monday, June 2-Friday, June 6, 10:00 am-noon, 1:00 - 3:00 pm

On-Line:

Monday, June 9-Friday, June 13 (3 Hours/Day)

Instructor: Fenqjen Luo

Office Location: Education Annex 204

Office Telephone: 678-839-6059

Email: fluo@westga.edu

Fax: 678-839-6063

Distance Learning Helpline: 678-839-6250

COURSE DESCRIPTION

Prerequisite: Bachelor's Degree and Academic Advisor's Approval

This course is designed for students who desire to strength their professional development in integrating both disciplines of mathematics and technology. This project provides K-12 school teachers professional development experiences to enhance standards-based instruction in mathematics through developing multimedia lesson plans, using graphing software to do mathematical simulations, adopting Internet applets and resources, and collaborating on Web-based site.

CONCEPTUAL FRAMEWORK

The conceptual framework of the College of Education at UWG forms the basis on which programs, courses, experiences, and outcomes are created. By incorporating the theme "Developing Educators for School Improvement," the College assumes responsibility for preparing educators who can positively influence school improvement through altering classrooms, schools, and school systems (transformational systemic change). Ten descriptors

(decision makers, leaders, lifelong learners, adaptive, collaborative, culturally sensitive, empathetic, knowledgeable, proactive, and reflective) are integral components of the conceptual framework and provide the basis for developing educators who are prepared to improve schools through strategic change. National Council of Teachers of Mathematics (NCTM) principles and standards, National Educational Technology Standards (NETS), and Georgia Performance Standards (GPS)) are incorporated as criteria against which candidates are measured.

The mission of the College of Education is to develop educators who are prepared to function effectively in diverse educational settings with competencies that are instrumental to planning, implementing, assessing, and re-evaluating existing or proposed practices. This course's objectives are related directly to the conceptual framework and appropriate descriptors, NCTM principles and standards, NETS, and GPS standards are identified for each objective.

COURSE OBJECTIVES

Students will:

1. gain an understanding of how children construct mathematical knowledge (lifelong learners, adaptive, collaborative, knowledgeable, proactive, and reflective; Van de Walle, 2001; National Council of Teachers of Mathematics, 2000; NCTM, 1989; NCTM, 2000; NETS, 2000; NETS, 2007; GPS);
2. gain an understanding of how to support mathematical teaching and leaning learning using (decision makers, leaders, lifelong learners, adaptive, collaborative, culturally sensitive, knowledgeable, proactive, and reflective; Van de Walle, 2001; NCTM, 2000; NCTM 1989; NCTM 2000; NETS, 2000; NETS, 2007; GPS)
3. become familiar with strategies to develop standards-based mathematics curriculum materials through technology (adaptive, collaborative, knowledgeable and reflective; Van de Walle, 2001; NCTM, 2000; NCTM 1989; NCTM 2000; ISTE 2007; GPS 2007; Van de Walle, 2001; NCTM, 2000; NETS ,2000; NETS, 2007; GPS);
4. implement standards-based mathematics curriculum materials (Van de Walle, 2001; NCTM, 2000; NCTM,1989) (decision makers, adaptive, collaborative, knowledgeable, and proactive, and reflective; Van de Walle, 2001; NCTM, 2000; NCTM 1989; NCTM ,2000; NETS, 2000; NETS, 2007; GPS);
5. reflect upon their beliefs of mathematics and technology education in today's classrooms (lifelong learners, culturally sensitive, and reflective; Van de Walle, 2001; NCTM, 2000; NCTM, 1989; NETS,2000; NETS, 2000; GPS).

TEXTS, READINGS, AND INSTRUCTIONAL RESOURCES

References:

Van de Walle, J. A. (2007) *Elementary and middle school mathematics: Teaching developmentally* (6th ed.). Boston: Allyn and Bacon.

National Council of Teachers of Mathematics (NCTM) principles and standards 1989, 2000.
<http://www.nctm.org>.

National Educational Technology Standards for students (2007) and for teachers (2000)

<http://www.iste.org>

Georgia Performance Standards <http://www.georgiastandards.org/>

ACTIVITIES AND ASSESSMENTS, EVALUATION PROCEDURES, AND GRADING POLICY

Description/Explanation of Assignments/Course Requirements:

#1 Professionalism/Participation (50%):

To meet the requirement of graduate course hours, students are expected to attend and participate in two Concurrent sessions every morning and the whole Mathematics and Technology strand sessions given in the afternoon during the Learning Festival week. In addition, students need to work another 15 lab hours after the week of Learning. Students will only earn partial points if they are tardy or quit from the class earlier.

The primary responsibility for managing the classroom environment rests with the faculty. Students who engage in any prohibited or unlawful acts that result in the disruption of a class may be directed by the faculty member to leave the class for the remainder of the class period. Longer suspensions from the class, or dismissal on disciplinary grounds, must be preceded by a disciplinary action or hearing as provided for in the University of West Georgia Student Handbook.

The term “prohibited acts” would include behavior prohibited by the instructor verbally (e.g. no smoking, no eating; speaking without being called on, refusing to be seated or refusal to change seats when directed by the instructor, refusing to leave when directed, or leaving or entering the room without authorization) or contained in the syllabus (e.g. tardiness, absenteeism, cell-phones). This provision is not intended to be used as a means to punish classroom dissent or for open discourse of ideas. The lawful expression of a disagreement with the teacher is not in itself “disruptive” behavior.

(Objectives #1, #2, #3, and #4; Evaluation: teacher observation)

#2. Midterm Standards-Based Mathematics Project (40%):

Mathematics Activity Project is a set of 5 activity units. Students must follow the distributed grading rubrics to complete this project and post on the collaboration Website “PBwiki”. .

(Objectives #1, #2, #3, and #4; Evaluation: teacher evaluation, rubric)

#3: Final Reflection Paper:

Mathematics Activity Project is a set of 5 activity units. Students must follow the distributed grading rubrics to write their final paper and post on the collaboration Website “PBwiki”. .

(Objectives #5; Evaluation: teacher evaluation, rubric)

Evaluation Procedures:

Activity	% of final grade	Assessment Tools
Professionalism/Participation	50%	Checklist, Teacher Evaluation, Teacher Observation
Midterm Standards-Based	40%	Teacher Evaluation

Mathematics Project		
Final Reflection	10%	Teacher Evaluation
TOTAL	100%	

Grading Policy:

Final grades will be distributed according to the following scale:

A = 90% or higher

B = 80%

C = 70%

D = 60%

F = Below 60%

COURSE OUTLINE

Dates	Topics	Assignments
Monday June 2	<ul style="list-style-type: none"> NCTM/GPS content and process standards Using graphing tools to develop geometric reasoning and representation 	<ul style="list-style-type: none"> Geometer's Sketchpad Shape Makers
Tuesday June 3	<ul style="list-style-type: none"> Facilitating mathematical processes through Word documents and PowerPoint presentations 	<ul style="list-style-type: none"> Multimedia Word documents PowerPoint animation
Wednesday June 4	<ul style="list-style-type: none"> Connecting teaching and learning resources on the Internet with GPS. 	<ul style="list-style-type: none"> Internet applets and resources
Thursday June 5	<ul style="list-style-type: none"> Developing standards-based mathematics curriculum materials on the collaboration Website 	<ul style="list-style-type: none"> PbWiki
Friday June 6	<ul style="list-style-type: none"> Developing digital library of mathematics teaching and learning 	<ul style="list-style-type: none"> Transitions among technology tools
Monday June 9	<ul style="list-style-type: none"> Using technology to collaboratively develop the midterm standards-based mathematics project across grade levels 	<ul style="list-style-type: none"> Transitions among technology tools
Tuesday June 10	<ul style="list-style-type: none"> Using technology to collaboratively develop the midterm standards-based project across grade levels 	<ul style="list-style-type: none"> Transitions among technology tools
Wednesday June 11	<ul style="list-style-type: none"> Using technology to collaboratively develop the midterm standards-based mathematics project across grade levels 	<ul style="list-style-type: none"> Transitions among technology tools
Thursday June 12	<ul style="list-style-type: none"> Using technology to collaboratively develop the midterm standards-based mathematics project across grade levels 	<ul style="list-style-type: none"> Transitions among technology tools
Friday June 13	<ul style="list-style-type: none"> Using technology to collaboratively develop the midterm standards-based mathematics project across grade levels 	<ul style="list-style-type: none"> Transitions among technology tools Midterm project must be presented on the PBWiki by Wednesday, June 18

Final June 20	• Sharing a 800 words reflection paper on PBwiki	• Final paper must be shared on the PBWiki on the final day
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ACADEMIC HONESTY

Students are expected to adhere to the highest standards of academic honesty. Plagiarism occurs when a student uses or purchases ghost-written papers. It also occurs when a student utilizes the ideas of or information obtained from another person without giving credit to that person. If plagiarism or another act of academic dishonesty occurs, it will be dealt with in accordance with the academic misconduct policy as stated in *The Student Handbook* and *Graduate Catalog*.