

 <p>University of Memphis College of Education</p>	College of Education
	University of Memphis
	Instruction and Curriculum Leadership
	ICL 7504
	Math Methods Ball Hall 210
	Fall 2009
Dr. Angiline Powell https://myspectrum.edu	
Office Location: 411B Ball Hall	
Tuesday 1:00 pm.-4:00 pm 8:00 pm.-8:30pm Thursday 9:00 to 11:00 pm and by appointment.	

**ICL 7504 Teaching Math Elementary and Middle School
Spring Fall 2009**

College of Education Norms

- I take 100% responsibility.
- I seek equity of voice.
- I am willing to talk about sensitive issues.
- I listen for understanding.
- I appreciate the strengths and contributions of others.
- I bring positive energy and encouragement to the team.
- I commit to the mission of the college.

Texts: Heddens, J. W. & Speer, W. (2006). *Today's Mathematics: concepts, classroom methods and instructional activities. 11th or 12th ed.*

Professionalism

Your active participation in this class is essential for building a productive learning community. It is expected that you will give freely of your ideas, constructively react to the ideas of others, and offer constructive suggestions for the good of the group. Responsibility for participation also includes: completing assigned readings and computer activities, willingness to take risks in sharing your opinions, and verbally participating in class discussions and activities.

Assignments

It's all about me...(20pts).

Please provide me with a PowerPoint of “Please be prepared to show the class your power point presentation. Using concepts on from the first week of readings examine how issues of race and class affected your own K-12 experience, whether it was urban, suburban or rural. Use a copy of my PowerPoint as a sample. Please place a copy in your folder and in the dropbox on ecourseware. **Tuesday September 8th at 5:00 pm.**

Autobiography

Please provide me with a “mathematics autobiography.” Include (but do not limit yourself the answers to the following questions: **Please answer in essay form, hand in a hard copy and place a copy in the dropbox. **Tuesday September 15th by 5:00 p.m.****

- Tell me about your family (please include spouses, children, parents, siblings)
- Why you chose education as your major and The University of Memphis as your school?
- Are you “good” at mathematics?
- Tell me about your educational triumphs or disasters. Highlight your mathematics education.
- Do you like or dislike mathematics? Why?
- What do you like about learning math? What do you not like?
- What is your first or strongest memory of learning or doing math?
- Have you ever been embarrassed, humiliated or especially proud of your mathematics ability?
- Do you like/dislike all areas of mathematics equally? If not, which ones do you like/dislike the most? Why?
- Who or what influenced (either positively or negatively) your feelings about mathematics?
- How do you feel about teaching mathematics?
- How do you think your attitude about math will affect your teaching of math?
- Describe a typical day in your future math class.

Please list the math courses that you have successfully completed and whether you took them in high school or college. A partial list is here to jog your memory.

Algebra 1	Geometry	Algebra 2	Pre-Calculus
Calculus I	Statistics	Calculus II	Differential Equations

Calculus III	College Algebra	Number Theory	Trigonometry
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Clinical Experience Assignments

A requirement from the Tennessee Board of Regents for this class is 10 hours of field experiences. If you are already working at a school you can work with a contemporary (uses manipulatives) mathematics teacher during your planning period. If you are not in a school, placement will be made through the teacher education office. Please take initiative and help students. Document each experience and remember you must go to the school a minimum five times.

Field Experiences 1-3 November 3rd

Field Experiences 4-5 December 9th

This semester you will complete FIVE different assignments related to your clinical experience. Each assignment is intended to focus your attention on particular aspects of the classroom environment and instruction. The assignments are connected to the readings that you will be doing for the course.

The five assignments are as follows:

1. **Classroom Manipulatives – Finding Them (p. 5) and Classroom Manipulatives – Using Them (p. 6)**
For this assignment, you may photocopy the pages from your textbook and write your answers on the photocopies.
2. **Analyzing Classroom Discourse (p. 30)**
For this assignment, you should turn in: (1) the observation sheet; and (2) your responses to the reflection questions. The observation sheet should have your handwritten notes from the class. The reflection questions should be typed up in a word processing program. Please DO NOT try to hand-write your answers to the reflection questions in the space provided on p. 3-C.
3. **Writing a Mathematics Lesson**
You should write a mathematics lesson designed to support the standards and principles from the NCTM. Please use the lesson plan format found on ecourseware.
4. **Mathematical Processes (p. 46, 45)**

For this assignment, you should turn in: (1) the observation sheet; and (2) your responses to the reflection questions. The observation sheet should have your handwritten notes from the class. The reflection questions should be typed up in a word processing program. Please DO NOT try to hand-write your answers to the reflection questions in the space provided on p. 46

Be sure that you include examples in your responses to the reflection questions. It is not enough to say that you saw one of the processes. You must provide specific examples from your observation to support your assertion that the process was present in the lesson.

1. ***Student Interview (Choose one interview from the following protocols: pp. 72-95)***
 - Choose one of the protocols listed above. Be sure that the protocol is at the appropriate level for the student with whom you will be working. You want the interview to be challenging enough for you to learn something about the student's thinking, but not so difficult that the student cannot answer any questions. You may need to add some questions to the interview in order to gather enough useful information.
 - Interview the student using this protocol. Write up a description of what happened during your interview, including the questions you asked and the responses given by the student. Answer the reflection questions for that interview (the questions listed at the bottom of the gray page). Be sure that you include enough details for me to be able to follow what happened during the interview. What did you learn about the student's thinking?

What I am looking for:

There are essentially two types of questions involved in these assignments. Some of the questions ask you to report what you observed (or the results of your interview). Your responses to these questions will be assessed on the basis of the thoroughness of the answer (*Did you include all of the information requested?*) and the level of detail provided (*Are your descriptions detailed enough for me to understand what was happening in the classroom during the period of your observation?*).

There are other questions in these assignments that ask you to reflect on what you have seen. Your responses to these questions will also be graded based on the thoroughness and level of detail provided in your response. *Do you support your reflections with specific examples from the observation?* But I will also be looking for evidence that you have engaged in reflection regarding what you have observed. *Is there evidence that you have learned something from doing this assignment?*

EACH OF THE FIRST FOUR ASSIGNMENTS MUST FOCUS ON A DIFFERENT LESSON. YOU MAY NOT USE THE SAME OBSERVED LESSON AS THE BASIS FOR MORE THAN ONE ASSIGNMENT. You must go at least five times.

Critique of Journal Articles (20 points each total 40 points)

As a graduate student you should be familiar with the journals in mathematics education. There are two basic types of journals; research journals and practitioner journals. Some of the research journals include *The Journal of Research in Mathematics Education*, *The International Journal of Educational Reform*, *Urban Education* etc. Some of the practitioner journals are from the NCTM and include *Teaching Children Mathematics* (formerly *The Arithmetic Teacher*), *Mathematics Teaching in the Middle School* and *the Mathematics Teacher*.

You should critique an article from two different type journals. Your report should include an overview of the article, the author's purpose, the author's audience, and a brief summary. The report should include any educational significance of the study. If the article is research-based, outline the literature review participants and the methodology and conclusion. .

Answer the following questions in essay form

1. The main purpose of this article is _____-.
(State as accurately as possible the author's purpose for writing the article.)
2. The key question that the author is addressing is _____.
(Figure out the key question in the mind of the author when s/he wrote the article.)
3. The most important information in this article is _____.
(Figure out the facts, experiences, data the authors is using to support her/his conclusion.)

4. The main inferences/conclusions in this article are _____.
(Identify the key conclusions the author comes to and presents in this article).

5. The key concept(s) we need to understand in this article is (are) _____.
By these concepts, the author means _____.

6. The main assumption(s) underlying the author's thinking is (are) _____.
(Figure out what the author is taking for granted {that might be questions}.)

7a. If we take this line of reasoning seriously, the implications are _____.
(What consequences are likely to follow if people take the author's line of reasoning seriously?)

7b. If we fail to take this line of reasoning seriously, the implications are _____.
(What consequences are likely to follow if people ignore the author's reasoning?)

8. The main point(s) of view presented in this article is (are) _____.

(What is the author looking at, and how is s/he seeing it?)
Discuss your reaction. Did you enjoy reading the article? Is the information contained in the article feasible, believable and beneficial? Did it make you think differently about the issue? Your critique must be at least two pages in length but no more than five. The journal from which you take the article cannot be over SEVEN years old. Please include a copy of the articles and a reference page in APA format.

1st September 22th, 2009

2nd September 29th, 2009

Email (5pts)

We can easily communicate through email and in person. You will receive five points if you email me within 24 hours of our first meeting. Please tell me your name and put ICL 7504 in the subject field. If you need help with email or attachments, please feel free to contact me after class and I will be glad to help you. If you use a different email

please go to <http://iam.memphis.edu/> and forward your email to the account that you use. **September 2nd.**

Email: apowell3@memphis.edu

Paper (50 points)

As graduate students, your responsibilities for this class will include a review of the literature. This review must be from empirical research (quantitative and qualitative). The presentation and paper will be about a selected mathematics topic. Please select from the following topics. In order to eliminate repetition of topics **PLEASE** okay your topic with the professor.

- Effective mathematics teacher practices
- Effective practices for urban students
- Multiple Intelligences (Gardner)
- Parental Involvement and urban students
- Characteristics of successful urban teachers.
- Characteristics of successful urban schools.
- NCTM Standards and their applications to urban students
- Learning styles of urban students

You must define your topic and discuss its implications for mathematics teachers, mathematics students, especially urban mathematics students, the Memphis community and society in general. All references should be in APA 4th edition format. These references should be research-based journal articles. The **Internet** should be used **sparingly**, only on-line journals are acceptable.

Topic due October 6th

Outline due October 26th

Paper due November 24th

Tests (TBA pts) and Quizzes(5pts) and Homework (5pts)

The tests will include mathematical concepts as well as pedagogical concepts. The questions will normally be short answer, multiple-choice, true/false or completion. Problems will be computational, logical, and illustrational in nature. If you must be absent from a scheduled test (with instructor approval), please contact the instructor personally, prior to the absence to make alternative arrangements for taking the test.

Attendance (Assignment Policy, and Make-up Policy)

All well students are expected to attend all sessions and participate in class discussions and activities*. Excessive absences (more than one), excessive tardiness or early dismissals (more than two) will result in a five point reduction of your final grade. I encourage you to read the chapters before they are discussed in class and we will discuss the information in terms of its validity, feasibility, and value in today's classroom. Have something to share! You are responsible for everything in the text and everything we cover in class. Late assignments will be penalized.

<i>Grade</i>	<i>Percentage</i>
A	90-100
B	80-89
C	70-79
D	60-69
F	0-59

Students with Disabilities

It is the policy of the University of Memphis as well as my personal philosophy to accommodate students with disabilities pursuant to federal law, state law, and the University's commitment to equal educational opportunities. Any student with a disability, who needs accommodation, for example in seating placement or in arrangements for examinations, should inform the instructor at the beginning of the course. Students with disabilities are encouraged to contact Student Disability Services, 110 Wilder Hall, phone 678-2880.

Plagiarism

All acts of dishonesty including plagiarism constitute academic misconduct. This is a grave offense and can result in failing the assignment, the class **and** expulsion from The University of Memphis. This is no joke

ALL assignments must be word-processed, double spaced in essay form using an acceptable 12 point font.

***Please understand that these dates and assignments are approximate. Each class is tailored to meet your individual needs and consequently some topics may take either a longer or a shorter amount of time. Your classmates and I appreciate your patience.**

All assignments are due at the beginning of class in your folder and on ecourseware (5:00 pm) on the due date. Any exceptions to this will results in a deduction of points.

<i>Date</i>	<i>Topic</i>	<i>Readings</i>	<i>Assignments due</i>
<u>Week 1</u> Tuesday Sept 1st	Learning Mathematics Geometry	Chap. Chapters 1 & 16	Email due Wednesday Sept 2nd by 5:00 pm
<u>Week 2</u> Tuesday Sept 8th	COE assessment		It's all about me... Chap. 16 7 a-c; 8a-c; 10a-i ;12,
<u>Week 3</u> Tuesday Sept 15th	Teaching Mathematics Geometry	Chap. 2 & 17	Math Autobiography **due beginning of class place in folder and upload to ecourseware Chap.17 1a-c; 1a-c; 5a-c
<u>Week 4</u> Tuesday Sept 22th	Assessing Mathematics Measurement	Chap. 3 &15	Chap 15 1, 2a-d;3a-c;5a- f;6a-f;7a-f;8a-f 1st Journal Article Due
<u>Week 5</u> Tuesday Sept 29th	Technology and Data Analysis	Chap. 4 & 14	2nd Journal Article Due
<u>Week 6</u> Tuesday Oct 6th	Data Analysis	Chap. 5 & 14	Chap 14 1;3a-e;4a-e;5 Paper Topic Due
<u>Week 7</u> Tuesday Oct 12th	Test 1		
<u>Week 8</u> Tuesday Oct 19th	Fall Break No Class		
<u>Week 8</u> Tuesday Oct 26th	Number Sense	Chap. 6	Chap. 6 1, 2, 4, 5a-c,6, 14a-b, 15, 19,23, 24 Outline DUE
<u>Week 10</u> Tuesday Nov 3rd	Addition and Subtraction	Chap. 7	Field Experiences 1-3

<u>Week 11</u> Tuesday Nov 10 th	Multiplication and Division	Chap. 8	Chap 8 1a-d, 2a-b, 3ab, 5 a-b, 6 a-b, 7 a-c, 8 a-c,9, 10.
<u>Week 12</u> Tuesday Nov 17 th	Number Theory	Chap. 9	Chap. 9 1a-c, 2 a-c, 4 a-d, 6, 8 a-c, 9a-c, 15a-c, 16 a-c, 17 a-c, 18 a-c 19 a-c 20 a-c 22
<u>Week 13</u> Tuesday Nov 24 th	Number Theory .	Chap. 9	Chap. 9 1a-c, 2 a-c, 4 a-d, 6, 8 a-c, 9a-c, 15a-c, 16 a-c, 17 a-c, 18 a-c 19 a-c 20 a-c 22 Paper due
<u>Week 14</u> Tuesday Dec 1 st	Rational Numbers (Fractions)	Chap. 11	Chap 11 1a-b, 2 a-b, 3a-b, 4, 5 a-b, 6a-d, 7a-c, 8a-d, 9, 10
<u>Week 15</u> Tuesday Dec 9 th	Fractions	Chap. 12 &13 if time.	Field Experiences 4-5 Chap 12 1,2, 4, 5, 6a-c, 7a-c, 8a-c, 9a-c, 11a-c,12, 13,16
<u>Week 16</u> Tuesday Dec 15 th		Exam	