

**College of Education  
Department of Teacher Education  
Spring 2008**

**Course:** ECED 4322A, B: Early Childhood Mathematics Education  
**Time:** TR: 8:30 – 9:45 (A); 10:00 – 11:15 (B) UH 355  
**Instructor:** Dr. Emam Hoosain: **Office:** University Hall: 369  
**Telephone:** 667- 4507 (W); 447- 8063 (H); **Email:** ehoosain@aug.edu  
**Office Hours:** TR: 2:30 – 5:00; MW: 1 – 3; and by appointment.

**Required Texts**

Van de Walle, John A. (2007). *Elementary and Middle School Mathematics: Teaching Developmentally* (6<sup>th</sup> ed.). NY: Pearson Education, Inc.  
Hoosain, E. (2003). *A Concrete, Problem-Solving Approach to Teaching Operations on Fractions Using Discrete, Manipulative Materials*. Tempe, AZ: Scholargy, Inc.

\*\*\*Livetext Membership

**Recommended Texts:**

Cathcart, W. G., Pothier, Y. M., Vance, J. H. & Bezuk, N. S. (2003). *Learning Mathematics in Elementary and Middle Schools* (3<sup>rd</sup> ed.). NJ: Merrill Prentice Hall.  
Kennedy, L. M. Tipps, S. & Johnson, A. (2004). *Guiding Children's Learning of Mathematics* (9<sup>th</sup> ed.). Belmont, CA: Wadsworth Publishing Company  
Musser, G. L. & Burger, W. F. (1994). *Mathematics for Elementary Teachers: A Contemporary Approach* (3<sup>rd</sup> ed.). NY: Macmillan College Publishing Company.  
Reys, R. E., Lindquist, M. M., Lambdin, D. V., Smith, N. L. & Suydam, M. N. (2003). *Helping Children Learn Mathematics* (6<sup>th</sup> ed.). NY: John Wiley & Sons, Inc.  
Sheffield, L. J. & Cruikshank, D. E. (2000). *Teaching and Learning Elementary and Middle School Mathematics* (4<sup>th</sup> ed.). NY: John Wiley & Sons, Inc.  
Troutman, A. P. & Lichtenberg, B. K. (1995). *Mathematics: A Good Beginning* (5<sup>th</sup> ed.). CA: Brooks/Cole Publishing Company.

**Pertinent Publications:**

National Council of Teachers of Mathematics. (2000). *Principles and Standards for School Mathematics*. Reston, VA: NCTM.

Supplementary Readings will be assigned from time to time.

**Syllabus**

**Catalog Description:**

The course focuses on a conceptual approach to mathematics that enables students to acquire clear and stable concepts by constructing meanings and abstracting concepts from physical situations and empirical experiences. The students will be expected to integrate their knowledge of mathematics, learning, pedagogy, students, and assessment, and apply that integrated knowledge to teaching mathematics in grades Pre-K through 5.

Prerequisites: Admission to ECED program; successful completion of Block I and II courses.

**Conceptual Framework Principles Addressed:**

1. Understand how students learn and develop and be able to provide developmentally appropriate learning opportunities that support their intellectual, social and personal development. (CFP 2)
2. Understand how students differ in their approaches to learning and be able to create instructional opportunities that are adapted to diverse learners. (CFP 3)
3. Understand and use a variety of instructional strategies to encourage the learner's development of critical and creative thinking, problem solving and performance skills. (CFP 4)
4. Plan instruction based on knowledge of subject matter, the learners, the community and curriculum goals. (CFP 7)

**Course Goal:**

To provide a framework of:

- (a) research-based pedagogical methods;
- (b) knowledge of curriculum, instruction, and assessment issues in mathematics education, and
- (c) practical experience, that will enable the students to (i) develop confidence in their ability to manage the instructional process; and (ii) formulate a plan for their continued professional development.

**Specific Objectives:**

The students will:

- (a) demonstrate a knowledge of NCTM's *Principles and Standards* and the Georgia Performance Standards (GPS);
- (b) plan learning experiences;
- (c) define learning goals for daily and unit plans;
- (d) develop daily and unit plans (unpack a standard);
- (e) develop strategies to teach mathematical concepts through hands-on and other experiences;
- (f) learn how to manage student behavior;
- (g) learn how to assess student achievement; and
- (h) gain practical experience by observing classrooms.

**Course Outline:**Tentative Schedule

Week 1: Big Ideas in the Teaching of Mathematics (Ch. 2, 3, 4, 8)

Week 2: NCTM's *Principles and Standards for School Mathematics* and the GPS (Ch. 1)

Week 3: Inductive and Deductive Reasoning and Multiple Representations

Week 4: Pre-Number Concepts (Matching, 1 – 1 Correspondence, Sorting, Sequences and Patterns) (Ch. 9, 15)

Week 5: Understanding Numbers and Number Concepts (Ch. 10, 11, 12)

Week 6: Addition and Subtraction of Whole Numbers (Ch. 13, 14)

Week 7: Multiplication and Division of Whole Numbers (Ch. 13, 14)

Week 8: Informal Geometry, Spatial Sense, Measurement, and Fractions (Ch. 16, 17, 18, 20, 21)

Week 9: Data Analysis & Probability, Assessing Student Achievement (Ch. 6, 22, 23)

Week 10: Problem Solving and Cognitively Guided Instruction (CGI). (Ch. 4)

**Laboratory Experience:** 02/11 – 02/15; 03/17 – 04/18.

**Spring Pause:** 03/06 – 03/07; **Spring Break:** 04/07 – 04/11.

### Evaluation

#### Course Grading Procedure:

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|---|-------------------|
| <b>1. Pedagogical Knowledge</b>   | <b>100 pts.</b>   |
| Class Participation and Attendance  | 20 pts.           |
| Examinations (Mid-Term [02/28] and Final [05/06, 10 – 12(A); 5/7, 10 – 12(B)]). Leave 5/6, 10 – 12 free so that both exams can be scheduled for that time. Exams will be based on what transpired in class and assigned readings.   | 80 pts.           |
| <b>2. Pedagogical Application</b>   | <b>45 points</b>  |
| Unpacking a Standard and Presentation (TBA) (CFP 7)   | 30 pts.           |
| Planning Learning Activities (Ongoing) [Inductive & Deductive Reasoning (CFP 4); Multiple Representation (CFP 2)]   | 15 pts.           |
| <b>3. Laboratory Experience Report (04/22) (CFP 4)</b>  | <b>100 points</b> |
| Please refer to the attached guidelines which should be followed to the letter. The focus is on the teaching of mathematics.  |                   |
| <b>4. Journal (Typed [1 – 2 pgs.] &amp; submitted 1/22, 2/5, 2/26; 3/11.)</b>   | <b>20 points</b>  |
| The Journal can be descriptive, reflective, and critical and may contain summaries of class proceedings and readings, what you are or are not learning, what you will like to learn, applicability of what you are learning to the classroom, etc. A grade will not be awarded for each Journal. One grade will be awarded for all Journals at the end of the semester. Feedback will be provided on each Journal. <b>Livertext must be used to create and submit these Journals. (CFP 9)</b> |                   |
| <b>5. Impromptu Assignments (e.g., Summarize a journal article.)</b>  | <b>15 pts.</b>    |

**More detailed directions about assignments will be given in class, if necessary. You are advised to meet with the Instructor individually or in small groups if you are unsure of what is required.**

**Note: All dates are tentative. A passing grade (at least a C) for the Lab Experience must be obtained in order to pass the course.**

**Note:** Students are required to attend classes regularly and punctually. If a student is absent for more than **two** times, he/she may be asked to withdraw from the class. Unsatisfactory attendance of classes and participation in class activities will adversely affect your final grade. It is the student's responsibility to complete any task assigned during his/her absence. **Points will be deducted for late submission of assignments – 10% for every day it is late.** Points will be deducted for grammatical and other errors in written assignments. All assignments should be typed double-spaced. You are advised

to complete the readings and assignments, meet regularly with other students to discuss issues, and see the Instructor if you have any problems. Examinations could be in-class, take-home or both. Requests to do make-up examinations, etc. should be made (in writing) only in cases of absolute necessity. Please refrain from bringing (except in your stomach) any form of food or drink to the classroom. If you do, there should be no eating or drinking in class (except with the Instructor's permission); and turn off your cell phones, please. Children and other relations are not allowed in class. Occasionally, the Instructor may communicate with you via your Pipeline email address; you are advised to read your campus email regularly. Unless agreed upon (between you and the Instructor), assignments should not be submitted as email attachments. Final Grading will be as follows:

**A: 90<sup>+</sup> - 100**

**B: 80<sup>+</sup> - 90**

**C: 70<sup>+</sup> - 80**

**D: 60<sup>+</sup> - 70**

**F: 00 - 60**