

**South Euclid-Lyndhurst City School District**  
**School-Based M.Ed. Program**  
**2006-07 Syllabus**

FALL '06  
 ED 436-51

*Course #:* ED 436

*Credit Hours:* 3 semester hours

*Course Title:* Middle Childhood Education Curriculum and Special Methods: Math

*Course Description:* Curriculum issues, methods, instructional resources and assessment strategies for middle grades math.

*Instructor:* Karen Valenza

*Required Texts:*

Kellough, Richard D. and Jioanna Carjuzaa. *Teaching in the Middle and Secondary Schools. 8<sup>th</sup> Edition.* Upper Saddle River, New Jersey: Pearson Education, Inc., 2006. ISBN: 0-13-1193732

Wiggins, Grant and Jay McTighe. *Understanding by Design. Expanded 2<sup>nd</sup> Edition.* Alexandria, VA: ASCD, 1998. ISBN: 1-4166-0035-3

*Rationale:* As the middle school has become the preferred grade configuration between elementary and high school, a separate and distinct middle level curriculum has emerged. In addition, the National Council of Teachers of Mathematics and the Ohio Department of Education have issued guidelines for mathematics teaching and learning at all grade levels.

Mathematics is a useful, exciting and creative area of study that can be appreciated by all students in grades 4-9. This course will employ the standards recommended by the NMSA (1995) and the NCTM (1989, 1991, 1995). In addition, it will take into account the Ohio Model Competency Based Mathematics Program developed by the Ohio Department of Education (1990). Future teachers will learn how to teach mathematics, using manipulatives and technology where appropriate. Emphasis will be placed on doing meaningful mathematics and in helping middle school children become confident doers of mathematics, able to reason and communicate mathematically.

*Conceptual Framework Strands Addressed:*

**Alignment of Course with NMSA/NCATE Guidelines**

Desired Outcomes	NMSA/NCATE Guidelines
<i>Referenced to the JCU Conceptual Framework</i>	
Designs coherent mathematics and integrated curriculum instruction	4.1, 5.1, 5.3
Understands and uses a variety of mathematics instructional strategies	5.1, 5.2, 5.3, 5.4, 5.5, 5.6
Creates a learning environment that encourages social interaction, active engagement, and self motivation	4.3, 5.2
Uses knowledge of communication techniques to foster active inquiry, collaboration, and supportive interaction	5.5
Understands and uses formal and informal mathematics assessment strategies, which are aligned with/or embedded within instruction and consistent with identified state and/or national goals	5.7, 5.8

<i>Referenced to NCTM/Ohio Mathematics Standards</i>	
Use and be able to model strategies used for problem solving in gr. 4-9	5.4, 5.5
Communicate mathematically, among peers and with the instructor. Encourage mathematical communication with and among students using the spoken word, the written word, diagrams, drawings and physical representations	5.6
Explore problems and describe results using graphical, numerical, physical, algebraic, and verbal mathematical models of representation. Make, model and encourage the connections between mathematics and other disciplines	5.3, 5.5
Use graphic calculators, computers, and CBLs for teaching mathematics	
Use physical materials to foster the learning of abstract ideas	
Select mathematical tasks and activities to stimulate and challenge all students, including those with limited proficiency in English and those with special needs	5.1
Use various methods of assessing students' mathematical ability.	5.7, 5.8

*Course Topics:*

- The Past, Present and Future of Mathematics Education (including an examination of the NCTM, state and local standards and courses of study)
- Addressing Diversity in Mathematics Education
- Doing Mathematics — Instructional Strategies
- Constructivism
- Situated Cognition
- Behaviorism
- Information Processing
- Problem Solving
- Assessment in Mathematics Education
- Mathematics Content and the Middle School Level
  - Number Sense and Operations
  - Basic Facts and Mental Computation
  - Fractions
  - Decimals, Percents, Ration and Proportion
  - Measurement
  - Geometry
  - Logic
  - Probability and Statistics
  - Algebra
  - Functions and Variables
- Integrated curriculum
  - Theoretical framework
  - Models and designs for integrated instruction
  - Planning interdisciplinary units
  - Teaching interdisciplinary lessons
  - Assessment of interdisciplinary units and instruction

*Objectives:* The student will be able to:

1. Understand the central concepts, tools of inquiry, and structure of the disciplines taught.
2. Plan instruction based on knowledge of subject matter, students, the community, and curriculum goals.
3. Understand how students differ in their approaches to learning as a result of racial, cultural, gender, learning style, and ability differences.
4. Demonstrate flexibility, responsiveness and persistence in adapting to diverse learners.
5. Understand and use a variety of instructional strategies appropriate for the specific content areas.
6. Design and implement coherent instruction in the content area.
7. Understand and use formal and informal assessment strategies based on subject matter taught.
8. Examine the history of the content area, particularly the shifts in methodology and materials/resources.
9. Become familiar with the standards set forth by the learned societies governing the various content areas and with the Ohio Curriculum Models.
10. Create learning environments that encourage critical thinking in the content areas.
11. Possess the knowledge and understanding necessary to develop skills to integrate the various content areas.
12. Collaborate with colleagues and the school/community to identify supportive resources to enhance teaching in the specific content areas.

*Course Outline:*

<u>Date</u>	<u>Topic</u>	<u>Assignment Due</u>
9/1	Syllabus and course requirements Grade Level Indicators Introduction to unit planning and UbD OAT and UbD	none
9/8	Understanding understanding	<p><i>UbD read chapters 2, 4 and 10</i> <i>TeachMiddSec read Module 1</i></p> <div style="border: 1px solid black; padding: 5px;"> <p><i>What is done in our classroom to start the year well? (Rules, procedures, discipline plan, seating, etc...) Which type of school is ours? Are there other settings available to our students within our school? Which type of schedule are we on? How do all of these benefit our students?</i></p> </div>
9/15	Essential questions	<p><i>UbD read chapters 3 and 5</i> <i>TeachMiddSec read Module 2</i></p> <div style="border: 1px solid black; padding: 5px;"> <p><i>What do we teach in this course? How are textbooks selected? What other materials do we use to teach this course? What are the most difficult topics and skills for our students to learn? How do we best address these difficulties? What special help do we offer?</i></p> </div>
9/22	Ruby Payne conference-no class	none

9/29 Crafting enduring understandings

*UbD* read chapter 6  
list of possible essential questions for unit  
*TeachMiddSec* read Module 3

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10/6 Assessing learning/understanding

*UbD* read chapters 7 and 8  
list of possible enduring understandings for unit  
*TeachMiddSec* read Module 9

*When and how often do we test students?*  
*How do we review material?*  
*What types of assessments do we use?*  
*What tells us that students have achieved understanding of course content?*  
*What counts as evidence of understanding in this course?*  
*How might we distinguish between students who seem to have a deep understanding from those who do not?*  
*How is grading handled in this course?*

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10/13 Planning for learning

*UbD* read chapter 9  
*TeachMiddSec* read Module 6

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10/20 Designing our units

*TeachMiddSec* read Module 7

*Is planning done collaboratively?*  
*Do we use interdisciplinary units in this course?*  
*Do we integrate curriculum?*  
*Which strategies work best in which sections of the course and with which students?*  
*Do we use social interaction and problem solving as teaching strategies?*  
*Do we use educational games in our classroom?*  
*How and when do we group students?*  
*Do we assign independent and group projects?*

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10/27 Designing our units

*TeachMiddSec* read Module 10

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11/3 Designing our units

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11/10 Designing our units

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12/15 Last day before break- no class

*Assignment Descriptions:*

**Summary of Directed Discussion** (100 points)

You will complete a written response to each set of questions (4 sets, shown in italics on the course outline, each set worth 25 points) after consultation with your cooperating teacher. Responses should not be limited to the questions shown. Many aspects of these answers will be identified and clarified through conversations with cooperating teachers about their experiences over the years in dealing with various curriculum materials, assessment techniques, and student population. One of the major goals of this assessment technique is the prompting of meaningful and detailed conversations between you and your cooperating teacher concerning the history and practice of teaching specific concepts in specific content areas to specific student populations.

All pages must be typed, using double spacing, one-inch margins and 12-point font. The following specific requirements are expected:

- Accuracy of Information – All data reported should be accurate.
- Clarity and Effectiveness – Writing should be clear, correct, and effective.
- Thoroughness – Each question should be clearly and fully answered.
- Thoughtfulness – Each response should give evidence of thoughtful reflection and should include clear evidence of your understanding of each of the topics of the course.
- Continuity – You may wish to incorporate theories and research learned in other graduate level courses or in other educational experiences. The textbooks should be referenced.

**Unit** (100 points)

You will develop a thematic unit based on the strategies learned in the book, *Understanding by Design*. (See detailed description and rubric).

*Clinical and/or Field Experiences:* Interns pursuing licensure in MC will spend 20 field hours in a placement other than the base. Interns pursuing licensure in AYA or MA will spend 40 field hours in a placement other than the base.

*Course Evaluation:* This course will be graded and 3 credit hours earned in December. The total number of points possible for the 3 credit hours is 200. Attendance and participation is mandatory. A 3 point deduction from the total points earned in the course will be applied for each session missed, if the student was present during the workday. If the student was absent from the workday, then the 3 point deduction does not apply.

*Grading Scale:* All assignments will be graded on a point scale based on the amount of time and level of difficulty involved in the preparation of the assignment. Final grades will be determined as follows:

A	100% - 93%
B+	92% - 90%
B	89% - 85%
C+	84% - 80%
C	79% - 70%

*Course Guidelines:* Assignments turned in late will result in a one-point per day reduction in the grade received. All assignments must be completed or an "incomplete" will be issued for the course.

*Students with documented disabilities are entitled to reasonable accommodations if needed. If you believe you need accommodations, please see the instructor of this course or JCU's Coordinator of Students with Disabilities (ext. 4967) as soon as possible. Accommodations will not be granted retrospectively.*