EDEL 600 Differentiated Math Strategies for Special Educators and Elementary Classroom Teachers

Debora Kuchey
kuchey@xavier.edu

Follow this and additional works at: http://www.exhibit.xavier.edu/education_syllabi_summer_2014

Recommended Citation
http://www.exhibit.xavier.edu/education_syllabi_summer_2014/28

This Restricted-Access Syllabus is brought to you for free and open access by the Education Syllabi 2014 at Exhibit. It has been accepted for inclusion in Education Syllabi Summer 2014 by an authorized administrator of Exhibit. For more information, please contact exhibit@xavier.edu.
Xavier University

EDEL 600 & EDSP 622

MONDAY & WEDNESDAY 4:30-8:15

Differentiated Math Strategies for Special Educators & Elementary Classroom Teachers

Instructor: Dr. Debora Kuchey
Office Phone: 513-745-3714
Office: Hailstones 317
Cellular: 513-703-1806
Office Hours: Monday, Tuesday & Wednesday 2-4
Email: kuchey@xavier.edu

The mission of Xavier’s Education Department is to educate, in the Jesuit tradition, students from varied backgrounds to be critical thinkers and ethical professionals in education and related fields who effectively contribute to and serve a world of many cultures and diverse communities.

Texts:
Teaching Student-Centered Mathematics Series: Choose One Grade Level Band:


Ohio Model Curriculum for Mathematics (2012). Standards are available online at http://www.ode.state.oh.us/GD/Templates/Pages/ODE/ODEDetail.aspx?page=3&TopicRelationID=1704&ContentID=83475

Course Description and Rationale: This course is designed to prepare both special educators and classroom teachers with the knowledge and skills needed to collaborate, co-teach, and remediate elementary mathematics. Benchmark Strategies and techniques will be explored to enable all students to meet the standards and improve performance on high stakes assessment. The Common Core State Standards adopted by the state of Ohio along with the Ohio Model Curriculum Content Standards will be examined throughout the course. The general learning format for the course will consist primarily of hands-on, minds-on activities, demonstrations, class discussions, and collaboration between classroom teachers and special educators. Participants are required to be active in their own learning and to be reflective about information presented in this course, the course readings and their own teaching and the learning of elementary math.
**COURSE OBJECTIVES:** The objectives of this course are derived from the essential knowledge, established and current research, and sound professional practices as related in the National Council of Teachers of Mathematics *Ohio Model Curriculum Standards*, and *The Common Core State Standards for Mathematics*. As a result of this course, the student will:

- Use current, effective methods and materials for teaching elementary mathematics to all students based on *The Common Core State Standards for Mathematics*, including the *Common Core Mathematical Practice Standards*.
- Provide a theoretical rationale for mathematics lessons and utilize this theory as a foundation for the mathematical learning of all students.
- Integrate technology into mathematics to enhance the learning of all students.
- Utilize a variety of assessment and evaluation techniques including high stakes testing and different resources designed to improve performance on such tests.
- Familiarize participants with the of *The Common Core State Standards*, including the *Common Core Mathematical Practice Standards*.
- Plan and deliver effective mathematics lessons to all learners.
- Select appropriate materials to support elementary mathematics instruction.
- Develop skills in handling simple mathematics materials/equipment and arranging and managing activities that meet the needs of students at various levels of ability.

### ASSIGNMENT

<table>
<thead>
<tr>
<th>ASSIGNMENT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARCC Critique</td>
<td>20</td>
</tr>
<tr>
<td>Tiered Math Lesson Plan</td>
<td>25</td>
</tr>
<tr>
<td>Lesson Plan Pre-Assessment</td>
<td>20</td>
</tr>
<tr>
<td>Math Diagnostics</td>
<td>25</td>
</tr>
<tr>
<td>Math Software Evaluation</td>
<td>15</td>
</tr>
<tr>
<td>Math Webquest Evaluation</td>
<td>15</td>
</tr>
<tr>
<td>Mid term and Final</td>
<td>50</td>
</tr>
<tr>
<td>Math Resource Binder</td>
<td>30</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>200</strong></td>
</tr>
</tbody>
</table>

**Grading Scale:**

- **A** = 95% - 100%
- **A-** = 93% - 94%
- **B+** = 91% - 92%
- **B** = 87% - 90%
- **B-** = 85% - 86%
- **C+** = 83% - 84%
- **C** = 77% - 82%
- **C-** = 75% - 76%
ASSIGNMENTS

Professionalism: Professional behavior is that which is expected of all teachers and is what you have come to expect of your teachers. This course is part of an accredited teacher preparation program. Students are required to demonstrate behavior consistent with a professional career. In particular, students are expected to:

- ASSIGNMENT DUE DATES: Assignments are due on the date noted on the course calendar. Grades for assignments submitted past the due date will be reduced two points for each day late.

WRITTEN ASSIGNMENTS: Correct grammar, mechanics, and spelling must be evident in all work that is submitted. All assignments must be typed or word-processed. Handwritten assignments will not be accepted. The standards for quality of written assignments are high. ACADEMIC HONESTY: The Education Department values academic honesty. It is expected that each student will submit original work. Where others’ works and ideas are used, citations must be included. Please refer to Xavier University Catalog for the official statement.

ATTENDANCE: Students are expected to attend all class meetings and field experiences. Attendance will be taken. If you will not be in class, you should call and leave a message on my voice mail. The instructor must be notified of any absences in advance. Remember that one class absence is equivalent to four and a half absences in a M-W-F semester class. TWO absences can result in failure of the class. More than two absences is an automatic failure. “Reasonable attendance at all class meetings of courses for which a student has registered is expected of students as a condition for granting of academic credit. Lack of reasonable attendance as determined by the individual faculty member is reason for denial of credit for a course and possible course failure.” (Xavier University, Catalog).

Reading Schedule: Reading assignments for each class are indicated on the course calendar. These readings will center on the topic to be covered. Reading is expected to be completed prior to the class meeting, with notice given as to how the readings address diverse learners in the classroom, and in context of the new Common Core State Standards.

PARCC Review: You will review PARCC online resources. Take one of the PARCC mathematics or Language Arts practice test. You are to write a review of PARCC. What is PARCC? How is it different from the Ohio Achievement Assessment? What should teachers do to prepare his/her students for the new assessments? What are the grade level content frameworks? How will these frameworks help teachers prepare students for PARCC Assessment? Complete a two page summary of, what is PARCC? The summary should be followed by a one page professional critique of the PARCC Assessment. A professional critique is NOT a personal opinion. Critique PARCC using professional documents, such as how does this align with the common core? How does this type of assessment promote high level thinking according to Bloom’s Taxonomy of Questions? How does this type of testing promote technological proficiency? Is this type of assessment developmentally appropriate? Why or Why not? According to which theorist? Avoid all use of first person in this paper. It is a professional summary and critique, not a personal opinion.

Tiered Math Lesson Plan: Choose a math lesson or activity and using the Childhood Education and Literacy Lesson Plan format, create a three tiered lesson plan, using the learning cycle. The lesson plan MUST include technology resources that COULD be used to assist higher achieving and lower achieving students. Carefully read over the rubric to ensure you have addressed all criteria in your lesson plan.
Pre-Assessment for the Tiered Lesson Plan: Create a pre-assessment you would administer to your students in order to formatively assess the students prior knowledge on the mathematical content in your tiered lesson plan. In a classroom, this pre-assessment would be used to create the tiers in your tiered lesson plan.

Mathematics Diagnostics: You will choose a mathematical concept for which you will be asked to construct a brief diagnostic test, based on the necessary pre-requisite skills for the concept presented along with the concept itself. This diagnostic test would be used with students who were unable to master the mathematical concept. The purpose of this activity is to give experience in designing a quick diagnostic to determine why the student does not comprehend a concept so that inferences can be made as to what instructional strategies and materials should be used to assure the student makes the necessary connections and develops an understanding of the concept. Such assessments will assure No Child Is Left Behind any lesson you teach, because assessments can be quickly designed and remediation plan quickly enacted for any child who does not master the skill to ensure all children succeed.

Software Evaluation: During the Friday evening class you will review and evaluate Geometry Sketchpad. A form provided in class will be completed to evaluate Geometry Sketchpad.

Webquest Evaluation: During the Friday evening class you will review and evaluate a Math Webquest. A form will be provided during class for you to complete.

Math Resource Binder: You are to develop a math resource binder for a grade level of your choice. This binder will be divided into the domains for that grade level. For each domain, you are to include 4-5 activities and 4-5 websites that could be used to develop a conceptual understanding of the domains content. These activities can be taken from numerous resources. At the beginning of each domain include a typed page that gives the titles of the activities and websites and clearly identifies the domain and cluster that each activity or website will address. You must include the reference where each activity was taken from. The binder should have a minimum of 20 activities and 20 websites. This binder should be clearly organized and serve as an excellent Common Core Math resource for a teacher of mathematics.
<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
<th>ASSIGNMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 12, 2014</td>
<td>Using Formative Assessment to Differentiate Mathematics Instruction Common Core Practice Standards</td>
<td>Laud Chapters 1-2</td>
</tr>
<tr>
<td>May 19, 2014</td>
<td><strong>Math Assessment PARCC</strong> Supporting Assessment for Low Achieving Students, High Achieving Students, and Culturally Diverse Students</td>
<td>PARCC Critique due Laud: Chapters 4-6 PreK-2: 3, 4, 5, 6 3-5: 3, 4, 5, 6 6-8: 3, 4, 5, 6</td>
</tr>
<tr>
<td>May 21, 2014</td>
<td>Number and Number Sense Setting the Foundations for all Mathematical Learning:</td>
<td>PreK-2: 8, 11 3-5: 8,10 6-8: 10</td>
</tr>
<tr>
<td>May 26, 2014</td>
<td>Memorial Day</td>
<td>No Class</td>
</tr>
<tr>
<td>May 28, 2014</td>
<td>Numbers and Operations: Alternative Algorithms for Computations with Whole Numbers</td>
<td>PreK-2: 9, 10, 12 3-5: 9,11 5-8: Mid-Semester Test</td>
</tr>
<tr>
<td><strong>FRIDAY, May 30, 2014</strong></td>
<td>Technology <strong>Meet in Cohen 190</strong></td>
<td>Software Evaluation and Webquest Evaluation will be completed that evening.</td>
</tr>
<tr>
<td>June 2, 2014</td>
<td>Number and Operations Fractions, Decimals Percent, Ratios and Proportions</td>
<td>PreK-2: 14 3-5: 12, 13,14, 6-8: 8,9,11 Tiered Lesson Plan Due Pre-Assessment Due</td>
</tr>
<tr>
<td>June 4, 2014</td>
<td>Measurement and Geometry</td>
<td>PreK-3: 15, 16 3-5: 16,17 6-8: 13,14 Math Diagnostic Due</td>
</tr>
<tr>
<td>June 9, 2014</td>
<td>Data Analysis, Probability</td>
<td>PreK-3: 17 3-5: 18 5-8: 15, 16 Math Binder Due</td>
</tr>
<tr>
<td>June 11, 2014</td>
<td>Algebraic Thinking <strong>Final Exam</strong></td>
<td>PreK-2: 13 3-5: 15 6-8: 12 Peer Lessons Final Exam: Due Friday, June 7th Hailstones 317</td>
</tr>
</tbody>
</table>

*The instructor reserves the right to make changes in the syllabus and/or calendar if circumstance so dictates.*