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2019

EDSP 622 Differentiated Math Strategies for Special Educators and Elementary Classroom Teachers

Debra Kuchey
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Xavier University
College of Professional Studies
School of Education

EDEL 600 EDSP 622

Summer 2019

**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: Email or Call as needed to arrange a face to face meeting.
Email: kuchey@xavier.edu

SCHOOL OF EDUCATION MISSION STATEMENT

In keeping with the Jesuit tradition, our mission is to educate men and women to be articulate in work, critical in thought, and competent in the knowledge, skills, and dispositions of their academic disciplines and professional endeavors. As such, they excel in teaching, leading, and serving their respective communities. This educational mission is furthered by an effective staff and administration, and by a faculty of excellent teachers, scholars, and leaders who serve the needs of the university and its diverse stakeholders. Accordingly, we provide curricula, instruction, and assessment procedures designed to meet the expectations of the specialized professional associations and the respective appropriate related state and national accrediting bodies.

Textbook:

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

Van de Walle, J. A. & Lovin L. H., Karp, K.s., Bay-Williams, J.M. (2018).

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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 *Ohio Learning 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.

STANDARDS:

Standards for Ohio Educators (SOE): The State Board of Education adopted the new teacher, principal and professional development standards in October 2010. The *Standards for Ohio Educators* details the standards and how they can be used.

http://education.ohio.gov/getattachment/Topics/Teaching/Educator-Equity/Ohio-s-Educator-Standards/StandardsforEducators_revaug10.pdf.aspx

- 1: Teachers understand student learning and development and respect the diversity of the students they teach.
- 2: Teachers know and understand the content area for which they have instructional responsibility.
- 3: Teachers understand and use varied assessments to inform instruction, evaluate and ensure student learning.
- 4: Teachers plan and deliver effective instruction that advances the learning of each individual student.
- 5: Teachers create learning environments that promote high levels of learning and achievement for all students.
- 6: Teachers collaborate and communicate with students, parents, other educators, administrators and the community to support student learning.
- 7: Teachers assume responsibility for professional growth, performance and involvement as an individual and as a member of a learning community.

NCTM National Council of Teachers of Mathematics Principles (NCTMP):

Equity. Excellence in mathematics education requires equity—high expectations and strong support for all students.

Curriculum. A curriculum is more than a collection of activities: it must be coherent, focused on important mathematics, and well articulated across the grades.

Teaching. Effective mathematics teaching requires understanding what students know and need to learn and then challenging and supporting them to learn it well.

Learning. Students must learn mathematics with understanding, actively building new knowledge from experience and prior knowledge.

Assessment. Assessment should support the learning of important mathematics and furnish useful information to both teachers and students.

Technology. Technology is essential in teaching and learning mathematics; it influences the mathematics that is taught and enhances students' learning.

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 Learning 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	POINTS
Discussions and Reading Responses	100
Tiered Math Lesson Plan	25
Math Diagnostics	25
Mid term	25
Final	25
TOTAL	200

Grading Scale:

A = 95% - 100 %

A- = 93% - 94%

B+ = 91% - 92%

B = 87% - 90%

B- = 85% - 86%

ASSIGNMENTS

Professionalism

Professional behavior is that which is expected of all teachers. This course is part of an accredited teacher preparation program, which leads to professional licensure. Candidates are required to demonstrate behavior consistent with a professional career. In particular, candidates 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.

Online Assignments and Reading Schedule: Online and reading assignments for each class are indicated on the course calendar and in canvas. These readings will center on the topic to be covered. Reading and assignments are expected to be completed each week. Please pay attention to how the readings address diverse learners in the classroom, and in context of the Ohio Learning Standards. Assignments, journals and reading responses will be given throughout the course to assess your understanding of the readings and to encourage rich discourse.

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.

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.

Students with Disabilities

Any student who feels he/she may need an accommodation based on the impact of a documented disability should notify the course instructor and contact Cassandra Jones in the Learning Assistance Center at 745-3280 or e-mail jonesc20@xavier.edu to coordinate reasonable accommodations.

Learning Assistance Center

The Learning Assistance Center (LAC) provides support services to facilitate learning. The LAC has two main purposes: tutoring and disability services. The tutoring services include subject specific tutoring, drop-in sessions, study skills assistance, and Supplemental Instruction (SI). For students with documented disabilities, services include accommodations such as extended time on exams, reduced distraction testing environment, note-taking assistance, and assistive technology. Services are provided in a positive and encouraging environment, which promotes appreciation for diversity and cura personalis. Students can contact the LAC at 745-3280 to set up an appointment. The LAC is located in the Conaton Learning Commons room 514.

<http://www.xavier.edu/lac/>

Mental Health Resources

Graduate

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Writing Center

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Summer 2019

DATE	TOPIC	ASSIGNMENT
Week One Modular One	Ohio Learning Standards of Mathematics and Standards of Mathematical Practices	Math Scavenger Hunt PreK-2: 1 3-5: 1 6-8: 1
	Learning Cycle & Inquiry Learning Through Problem Solving.	Chapters 1-3 Book Tour PreK-2: 2-3 3-5: 2-3 6-8: 2-3
Week Two Modular Two	Differentiated Instruction	Chapters 4-7 Book Tour PreK-2: , 4, 5, 6, 7 3-5: 3, 4, 5, 6, 7 6-8: 3, 4, 5, 6, 7
	Number and Number Sense Setting the Foundations for all Mathematical Learning:	Chapters Book Tour PreK-2: 8, 11 3-5: 8,10 6-8: 10
Week Three Modular Three	Numbers and Operations: Alternative Algorithms for Computations with Whole Numbers	Chapters Book Tour PreK-2: 9, 10, 12 3-5: 9,11 5-8:
	Number and Operations Fractions, Decimals Percent, Ratios and Proportions	Chapters Book Tour PreK-2: 14 3-5: 12, 13,14, 6-8: 8,9,11 Mid-Semester Test Due
Week Four Modular Four	Measurement and Geometry	Chapters Book Tour PreK-3: 15, 16 3-5: 16,17 6-8: 13,14
	Data Analysis, Probability	Chapters Book Tour PreK-3: 17 3-5: 18 5-8: 15, 16 Tiered Lesson Plan Due
Week Five Modular Five	Algebraic Thinking	Chapter Book Tour PreK-2: 13 3-5: 15 6-8: 12 Math Diagnostic Due
	Final Exam	Final Exam Due
<i>The instructor reserves the right to make changes in the syllabus and/or calendar if circumstance so dictates.</i>		