EDC 456: Mathematics Methods in
Elementary and Middle School Teaching
Spring 2014

Section 03 - Monday 4:00-5:50 AM – Chafee 141
URI Kingston Campus

Instructor: Dr. Pete Adamy
Office: URI Kingston Campus - Chafee 613
Phone: 874-7036
E-Mail: adamy@uri.edu
Office Hours: Wednesday 2:00 - 4:00 and by appt.

Catalog Description: Principles and practices of developing knowledge and skills in mathematics with elementary and middle school children.

Course Objectives:
Students will:
1. develop a richer understanding of the content of school mathematics;
2. develop an understanding of mathematics as an active, exploratory process and ultimately, a rewarding & pleasurable one;
3. develop an understanding of how to teach mathematics that is developmentally appropriate for students in the elementary and middle grades;
4. formulate a teaching methodology for the meaningful learning of mathematics.

Course Prerequisite:
EDC 423, 453, 454; acceptance into the elementary education program

Course Texts:
- Van de Walle, J. A., Karp, K. S., & Bay-Williams, J. M. (2013). *Elementary and middle school mathematics methods: Teaching developmentally* (8th ed.). Pearson: Boston. (ISBN: 978-0-13-261226-5)
- Bay-Williams, J. M. (2013). *Field experience guide for elementary and middle school mathematics* (4th ed.). Pearson: Boston. (ISBN: 978-0-13-282113-1)
- Common Core State Standards for Mathematics (http://www.corestandards.org/assets/CCSSI_Math%20Standards.pdf)
- National Council of Teachers of Mathematics (NCTM) Standards: (http://www.nctm.org/standards/content.aspx?id=16909)

Course Requirements:
Concurrent enrollment in EDC 457, EDC 458, and EDC 459.

Successful completion of this course provides students with one component for the achievement of:
- Rhode Island Professional Teacher Standards 2, 3, 4, 8, 7, 10, and 11;
- RI Middle Level Competencies 2, 4, and 8; and

- The Association for Childhood Education International (ACEI) Standards 1, 2.3, 3.2, and 5.

This course is graded A, B, C, D, or F. You must earn a C or better in this course to continue into student teaching next spring. All assignments are expected to be done on time and in a high quality manner. Written work is to be typed, double-spaced in 12 point font.

Attendance:
It is expected that you will attend every class session and come prepared, having completed all readings and assignments for that class. Missing class will result in points deducted from your total. **More than 3 absences may result in a student being required to retake this course**. If you have a valid reason for missing a class, please contact me regarding your absence (in advance whenever possible) and arrange a make-up assignment when necessary.

Writing Skill and Guidelines:
As members of the university community, students in the elementary education program are expected to demonstrate excellent written communication skills in all exams and papers. Common conventions of academic writing are expected in this course, and all written work must use proper formatting and citation procedures, as outlined in the American Psychological Association's (APA) *Publication Manual*. The best on line source for APA style is: https://owl.english.purdue.edu/owl/resource/560/01/

Special Considerations:
If you have a documented disability that may require individual accommodations, please make an appointment to discuss this prior to the second class meeting. We will discuss how to meet your individual needs to ensure your full participation and fair assessment procedures.

Major Assignments & Grading:
- Attendance and participation* - 15%
- Mathematics curriculum planning task - 25%
- Practicum math lesson and assessments - 25%
- Chapter questions and quizzes, and in-class assignments - 10%
- Research on current practice - 25%

Course Outline:

Date	Topic	Assignments
1/27	• Course Introduction • How Children Learn Mathematics: Understanding Conceptual and Procedural Knowledge	Van de Walle Ch. 1 & 2
2/3	• NECAP • NCTM & Common Core	• Van de Walle Ch. 3 & 4 • Common Core Math Standards

Date	Topic	Assignments
	State Standards • Problem Solving and the problem-based classroom	
2/10	• Assessment • Differentiation	Van de Walle Ch. 5 & 6
2/17	• Early Number Concepts, • Beginning Whole Number Operations	Van de Walle Ch. 8, 9, & 10
2/24	Place Value Concepts	Van de Walle Ch. 11
3/3	Addition and Subtraction	Van de Walle Ch. 12 **Due**: Research on current practice paper
3/10 - 3/14 Mid-Term	**No Class – Spring Break**	
3/17	Multiplication and Division	Van de Walle Ch. 13
3/24	Algebraic Thinking	Van de Walle Ch. 14
3/31	• Fractions • Decimals and Percents	Van de Walle Ch. 15, 16, & 17 **Due**: Mathematics curriculum planning task
4/7 (AERA)	• Proportional Reasoning • Measurement	Van de Walle Ch. 18 & 19
4/14	Geometric Thinking and Concepts	Van de Walle Ch. 20
4/21	Data Analysis and Probability	Van de Walle Ch. 21 & 22
4/28	Exponents, Integers, and Real Numbers	Van de Walle Ch. 23 **Due**: Practicum Math lesson and assessments documents

*What does "participation" look like?

1. Working with purpose and focus throughout class time.
2. Asking questions of instructor and peers that demonstrate that you are thinking about what we are doing.
3. Cooperating well with peers.
4. Adding insights to the class discussion that are based on readings and learning from previous sessions and other courses.
5. Listening to others with respect and commenting appropriately on their points.

Take control of your own learning and development