

Cedar Crest College
Department of Education
EDU 532: Spring 2010

EDU 532: Curriculum, Assessment, and Learning Experiences in Mathematics, K-6.

Instructor: Dr. Jill Purdy

Phone: 610-606-4666 Ext. 3419

Office: Curtis 266

Email: jepurdy@cedarcrest.edu

Class: W: 6-9

Office Hours: W: 3:30-5:30, TH: 2:30-5:30

*Please note that I will only correspond via Cedar Crest email accounts. In case of inclement weather you may call my voicemail on the day of class.

Materials:

- Van De Walle, J.A. (2007). Elementary and Middle School Mathematics – Teaching Developmentally (7th Edition). Boston, MA: Pearson.
- Calculator
- Copy of PA State Mathematic Standards

Course Description:

This course focuses on the methods, materials, and content necessary for teaching (K – 6) Mathematics. One purpose is to acquaint pre-service teachers with the Pennsylvania Department of Education (PDE) Math standards and the National Council of Teachers of Mathematics (NCTM) standards. The second purpose is to provide the math content, methodology, and pedagogy necessary for the pre-service teachers to become confident in their ability to provide these services to their students. This course will present a range of developmental activities, which will prepare the pre-service teacher to work effectively in a contemporary classroom, and to help children construct mathematical knowledge.

Course Objectives:

- Students will examine contemporary learning theories and innovative techniques of teaching and learning (K – 6) Mathematics.
- Students will become familiar with PDE and NCTM mathematic standards.
- Students will learn the critical components that help to create a successful and engaging learning environment in (K – 6) Mathematics.
- Students will overcome challenges of teaching mathematics, reflect upon, and grow from their own experiences of learning and teaching mathematics.
- Students will understand the importance of the integration of literature and mathematics.
- Students will research a current trend in the teaching and learning of elementary mathematics.
- Students will engage in activities that pertain to remediation, gifted and ESL students and lessons.

The student will exhibit learning by:

- developing hands-on and developmentally appropriate lessons.
- planning and presenting a hands-on developmentally appropriate lesson.
- creating an activity notebook that contains ideas and strategies that can be implemented in the elementary classroom.
- participating in class discussion and personal reflections about their learning process.
- integrating Mathematics and literature activities.
- Integrating Mathematics and technology activities.
- synthesizing and sharing current research trends in the field of mathematics.
- participating in creating activities and that address the needs of exceptional and ESL learners.
- familiarizing themselves with various websites that aid in the teaching of mathematics, including the NCTM. Students will be encouraged to join the National Council of Teaching Mathematics.

Student Accommodations: Students with documented learning disabilities who may need academic accommodations should discuss these needs with their professors during the first two weeks of class. Students with disabilities who wish to request accommodations should contact the Advising Center during the first week of class.

Honor Philosophy: The Cedar Crest Honor Philosophy is based upon the principle that, as a self-governing body, students have the ability to create an atmosphere of trust and support. Within this environment, individuals are empowered to make their own decisions, develop personal regard for the system under which they live, and achieve a sense of integrity and judgment that will guide them through life. The formal honor code adopted by CCC as outlined in the college catalogue and student handbook will be followed in this course. Appropriate behavior is implicit in the Cedar Crest College Honor Code.

Classroom Protocol: Appropriate classroom behavior is implicit in the Cedar Crest College Honor Code. Such behavior is defined and guided by complete protection for the rights of all students and faculty to a courteous, respectful classroom environment. That environment is free from distractions such as late arrivals, early departures, inappropriate conversations, and any other behaviors that might disrupt instruction and/or compromise students' access to their Cedar Crest College education. In order to minimize distractions, please turn cell phones off during class. Please silence your cell phone while in class. In addition, text messaging is inappropriate during the class.

Attendance and Late Arrivals: Your attendance at all class meetings is expected and a vital part of the learning process. If vacations, athletic activities, professional duties, medical appointments, or any other conflicts prevent you from fully attending all classes, you are strongly encouraged to take this course during another semester. If an illness or emergency occurs during the semester, you are responsible for contacting the course instructor to make up work missed. Due to the interactive nature of this course, however, there will be assignments that you will not be able to make up if you are absent.

Late Assignments: Assignments are due at the beginning of each class. Any assignments handed in after that (including email) will be considered late. Late assignments will be lowered a full letter grade for each day.

Plagiarism: Plagiarism is regarded as a failure to comply with the college honor code. Therefore, any student who is documented as cheating on an assignment, plagiarizing or otherwise breaking the honor code will receive an "F" for that assignment. This policy includes plagiarizing by not citing the material accurately. Please use the APA manual for accuracy. Students may not use the same paper, unit, or lesson plan for more than one course without the permission (in writing) of both instructors.

Course Accomplishments:

Professionalism	50
Research Paper	100
Lesson Plans (2 Lessons)	100
Lesson Presentation	50
Activities Notebook	200

ALL certification students must achieve a "B" or better in this course.

Grading:

94-100	A	77-79	C+
90-93	A-	74-76	C
87-89	B+	70-73	C-
84-86	B	67-69	D+
80-83	B-	63-66	D

Assignment Criteria:

- **Professionalism** (See Department Rubric)
- **Math Lessons** – Create 2 developmentally appropriate lessons that meet the PA State standards. Lessons should follow CCC format. The lessons will be for grades: k-3 and 4-6. One lesson must include a literature activity and one must include an open-ended response activity. All lessons should engage the learner beyond lecture and practice problems. No review or test lessons will be accepted. Students will be allowed to abbreviate objectives in the SWBAT (students will be able to). Lessons should be activity based, creative and **original**. Students should be active throughout the lessons. (See Rubric)
- **Lesson Presentation** – You will present one of your lessons to the group. The lesson should be planned for a 15 minutes mini-lesson. You will be scored on a rubric by the professor and your peers will provide feedback. (See Rubric)
- **Activities Notebook** – You will compile a list of activities for each topic studied. This notebook will be a valuable resource for you as you enter your teaching career. Each activity should appear on a separate page and contain the following: title, grade level, materials needed, a description of the lesson procedure, student learning expectation and how learning will be exhibited, and APA reference to any borrowed ideas. One of your activities should clearly address the gifted learner, one activity should address the special needs learner and another should address the ESL learner. Indicate these in your heading. Please See Table of Contents for topics.
- **Research Paper** – You will locate a research study conducted in the elementary or middle level. This should be a study reporting on action research, not a lit review or an article. You will write a synopsis of the research that includes the participants, background information, design of the study, and outcomes or results. Also, you should include how the results impact your teaching or the field of teaching math. (3-5 pages)

EDU 532 Activities Notebook Outline

Each section must include five student-centered activities. You should have 50 activities @ 4 points each for a total of 200 points.

Notebook should be neatly done so that you are able to easily reference at a later date.

- I. Basic Number Sense
- II. Addition/Subtraction
- III. Multiplication
- IV. Division
- V. Ratios and Proportions
- VI. Algebraic Thinking
- VII. Fractions
- VIII. Decimals and Percents
- IX. Measurement
- X. Data Analysis and Graphing

Any ideas that are not original should be referenced appropriately.

Course Schedule:

<u>Date</u>	<u>Topic(s)</u>	<u>Assignments Due</u>
1/20	Course Description/Assignments and Requirements	
	NTCM Standards	Read Ch. 1
	Doing Math	Read Ch. 2
1/27	Teaching through Problem Solving	Read Ch. 3
	Planning in a Problem-Based Classroom	Read Ch. 4
2/3	Building Assessment into Instruction	Read Ch. 5
		10 Activities due (I, II)
2/10	Teaching Mathematics Equitably (Exceptional Student/ESL issues)	Read Ch. 6
	Using technology	Read Ch. 7
2/17	Developing Early Number Sense	Read Ch.8
	Developing Meaning for Operations	Read Ch. 9
	Basic Facts	Read Ch.10
		10 Activities (III, IV)
2/24	Whole Number Place Value	Read Ch. 11
	Whole Number Computation	Read Ch. 12
		Lesson 1 due
3/8	Estimation	Read Ch 13
	Literature and Math	
3/10	Spring Break	
3/17	Algebra	Read Ch. 14
		Research Paper Due
3/24	Fractions	Read Ch. 15 & 16
	Decimals & Proportions/Ratios	Read Ch. 17 & 18
		Lesson 2 Due
3/31	Measurement	Read Ch. 19

4/7	Geometry	Read Ch. 20
	Data analysis	Read Ch. 21
	Probability	Read Ch. 23
		10 Activities due (V, VI)
4/14	Lesson Presentations & research share	
4/21	Lesson Presentations & research share	10 Activities due (VII, VIII)
4/28	Lesson Presentations & research share	
5/5	Lesson Presentations	10 Activities due (IX, X)

***The professor reserves the right to adapt this syllabus to meet the needs of the class at any time.**