

MORAVIAN COLLEGE
Spring 2012, EDUC 325 PM/Z *Mathematics in the Elementary School*

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Hours: Thursday 5:30-6:30 or by appointment

<i>EDUC 325</i> is designed to help you help children learn important mathematical concepts, skills, and problem solving techniques. In the process it is hoped that your thinking will be challenged and your interest in mathematics stimulated.	Students in EDUC 325 must have: <ol style="list-style-type: none">1.A minimum grade point average of 2.72.Completed EDUC 160 and 1553.Completed MATH 125 with a C or better4.Passed the PPST in mathematics5.Appropriate clearances for Stage 3 Field Experience
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EXPECTED STUDENT OUTCOMES (ESO):

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| ESO 1. | You will review the content underlying and included in elementary school mathematics programs. |
| ESO 2. | You will develop an understanding of the NCTM <i>Principles and Standards for School Mathematics</i> . |
| ESO 3. | You will develop an understanding of the PA Mathematics Standards, Assessment Anchors, and SAS |
| ESO 4. | You will demonstrate competency of basic elementary mathematical operations and procedures. |
| ESO 5. | You will acquire an understanding of basic elementary mathematical concepts. |
| ESO 6. | You will develop a comprehensive view of an appropriate mathematics curriculum, goals of instruction, and types of mathematical learning. |
| ESO 7. | You will learn specific strategies to teach selected content to specific children as well as general teaching strategies appropriate for differentiating instruction for all learners. |
| ESO 8. | You will develop pedagogical skills: planning, selection of appropriate materials and lessons, managing a mathematics class, diagnosing, and evaluating. |
| ESO 9. | You will become familiar with a variety of manipulatives. |

- ESO 10. You will develop an understanding of how to integrate the use of technology into the study of and the teaching of mathematics.
- ESO 11. You will become conscious of equity issues in the study of mathematics.
- ESO 12.** You will develop a positive attitude toward teaching mathematics.

YOUR PERSONAL GOALS: List 3 or 4 goals of your own.

1. _____
-
2. _____
-
3. _____
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4. _____

REQUIRED TEXTS:

Cathcart, George W., Pothier, Yvonne M., Vance, James H. and Bezuk, Nadine S., *Learning Mathematics in Elementary and Middle Schools: A Learning Centered Approach*. Boston, MA: Pearson Education, Inc., 2011.

Sherman, Helene J., Richardson, Lloyd I., and Yard, George J., *Teaching Learners Who Struggle with Mathematics: Systemic Intervention and Remediation*. Upper Saddle River, NJ: Pearson Education, Inc., 2009.

Additional invaluable resources for you to use all semester.

National Council of Teachers of Mathematics (NCTM)
Standards Aligned System
<http://standards.nctm.org/>

PA Dept of Education
<http://www.pdesas.org/>

Readings (Cathcart; Sherman)

COURSE SCHEDULE: (Subject to Change)

January 19 Course Introduction, Standards

	Teaching and Learning Mathematics	C 1 & 2 - S 1
January 26	Thinking Mathematically / Problem Solving	C 3 - S 9
February 2	Assessment Test # 1 (C 1-3)	C 4
February 9	Developing Number Concepts	C 5 & 6 - S 2
February 16	Whole Number Operations and Basic Facts	C 7 & 8 - S 3 & 4
February 23	Estimation and Computation Test # 2 (C 4-6) C 9 - S 5 & 6	
March 1	Fraction Concepts	C 10 - S 7
March 8	Spring Break	
March 15	Fractions / Decimals / Ratio Test # 3 (C 7-9)	C 11, 12, & 13 - S 8
March 22	Geometry	C 14
March 29	Measurement and Data Test # 4 (C 10-13) C 15 & 16 - S 10	
April 5	Algebra Test # 5	C 17
April 12	Grade Level Presentations	

April 19 Grade Level Presentations

April 26 Grade Level Presentations

Stage 3 (Pre-Student Teaching) Field Experience - March 19 through April 27

Mar 27 Job Fair – attendance required in the morning (these hours count towards your 90)

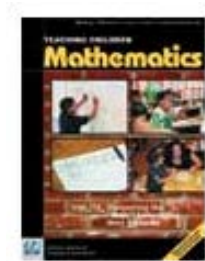
April 25 Preparation for Student Teaching in Fall 2012 – 4:00 PM

You must have your approval letter in order to attend the meeting.

COURSE ACTIVITIES:

1. **Participation in class.** There is a difference between active participation and passive participation. Passive participation is showing up for class, taking notes, and even looking interested in what's going on in class. Active participation is the expectation – that is you are expected to contribute in class by being alert, interested, engaged, and cooperative. Expect to both answer and ask questions. Be anxious to share your thoughts on problem solving and your readings. Show that you are prepared. Talk about what you have read.
2. **Read and be prepared to discuss all reading assignments.** You will need to show that you are reading assignments through your discussions in class and through your tests.
3. **Study for tests.** You will have four tests on the content of the textbooks and related class discussions and presentations. We will go over some of the material in your texts, but you are responsible for knowing all of it. It is always beneficial to form study groups to discuss the content of the texts to help prepare for the tests. An optional 5th test will be available, with the 4 highest grades counted toward your final grade.
4. **Demonstrate the ability to use a word processing program, the Internet, and the SmartBoard.** All written work that is turned in must be done via word processing. Use a 12-point, easy to read font. Do not use all caps. Use 1 and 1/2 " line spacing and 1" margins all around. All written assignments will be graded for proper grammar and composition. Use the APA Style Format. If you are at all concerned about your writing ability, visit the Writing Center.
5. **Grade Level Project.** Plan, prepare, and present to the class the mathematics curriculum for a given grade level. The presentation must include a brief overview of the curriculum at the grade level, hands-on whole group learning activities, and a learning center designed by each member of the group, if applicable. *The overview and the whole group activities are a group project and will be graded as a group grade.* The overview should be done via **PowerPoint**. Required is a 2 to 4 page summary of the presentation – stating how the presentation was organized and describing each activity. Include a rationale for each activity. The presentation must also incorporate the use of the

SmartBoard technology. The learning centers will be graded individually. Each learning center must have a **minimum** of three activities **plus** a related website activity **and** a related literature activity – total of a **minimum** of five activities all together. Each center must be based on a **specific NCTM content standard**. When done as a group, each person should pick a different content standard. Each individual must submit a one-page summary **spreadsheet** containing a list of activities for the learning center, the objective for each activity, and alignment to the PA Math Standards. You must also have a one-page write up for each activity explaining the activity and citing the source of the activity. Attach copies of all the handouts at the center. The whole group activities and the activities in the learning centers should all be different. Your activities should be obtained from *enVision* or *Investigations*. You may also use activities from SAS or other Internet resources. There are many educational websites filled with exciting activities, including *Illuminations* by NCTM. Make sure your activities are grade level appropriate. You may not make up activities on your own, although you may embellish those you find. Each group/ individual will have 1.5 hours to present. The first hour will be devoted to the brief overview and the whole group activities. Additional time will be used to explore the activities at the learning centers. You will need to have enough handouts for each class member. A student worker in the education department will do the copying for you free of charge if you request it 2 days in advance. Students should all expect to do the activities at the centers. Participation is important to your learning. Students will critique each presentation and learning center. See the rubric for further details on grading.



6. **Book reviews.** Summarize and discuss how three different children's books can be used to teach mathematics. Each book must focus on a different **NCTM content standard**. Include complete reference material. Scan a picture of the book (or download image from the Internet) to include in the reference material. Each review should be 2 to 4 pages in length. The summary of the book should be less than 1 page. The discussion on how to use the book should be 2 to 3 pages. You must include a discussion of how the book and your activities align with the standards – be very specific and site the standards you are using correctly using APA style. Just listing the standards is not discussing how the standards align and how the process standards are integrated with

the activities you describe. Use the Internet to search for teaching ideas and site your references using APA. You may also find ideas in *Teaching Children Mathematics*. You must find your activity ideas in print or on the Internet. Do not make them up on your own or use things you have seen in your field experiences. You will be graded on content, style, and research. **Due dates: February 9, March 1 and 22.**

7. **Complete Stage 3 (Pre-Student Teaching) Field Experience requirements.** A separate syllabus will be distributed in class prior to the beginning of the field experience. You will be expected to fulfill all the requirements and submit evidence of your performance in a portfolio. In addition your cooperating teacher will complete an evaluation of your competency in accordance with the Pennsylvania School Code Chapter 354. Your College instructors will visit you weekly to monitor your progress. You will keep a daily attendance sheet - ***you are required to complete a minimum of 90 hours during this experience*** - and submit that as evidence of your attendance at the conclusion of the experience. Due to holidays in the public schools, you will need to find additional hours to make sure you meet the minimum hours requirement. This experience is expected to totally prepare you for student teaching. You should expect to go beyond the requirements and prove your dedication and work ethic. **Students who fall short of the expectations will not be approved for student teaching without completing further successful fieldwork.**



COURSE EVALUATION:

Your performance in the following areas will determine your final grade:

Curriculum Project: Overview & Whole Group Activities	18%
Curriculum Project: Learning Center	18%
Book Reviews (4% for each)	12%
Test 1	8%
Test 2	8%
Test 3	8%
Test 4	8%
Stage 3 (Pre-Student Teaching) Experience	20%

Your performance in all areas will be graded in accordance with Moravian College's standards of academic achievement as stated in the Student Handbook.

Fulfilling any given requirement does not automatically guarantee an A or full points for an assignment. A's (full points) are given to those students who go beyond the requirements and expectations. Assignments must show evidence of time, effort, originality, and dedication to the research process. Assignments will be graded by the instructor. It is within the instructor's purview to apply qualitative judgment in determining grades for an assignment or for the entire course. **You will not be permitted to redo your work for a better grade. There are no additional assignments for extra credit.**

The following grade conversions will be used in determining your recorded letter grade for the course:

94-100 %	A	90-93.99 %	A-
87-89.99 %	B+	84-86.99 %	B
80-83.99 %	B-	77-79.99 %	C+
74-76.99 %	C	70-73.99 %	C-
67-69.99 %	D+	64-66.99 %	D
60-63.99 %	D-	0-59.99 %	F

ATTENDANCE POLICY: You are expected to attend every class. Absence for illness will be excused with written verification from a healing practitioner. You need to email the instructor prior to any class that you will be missing. Your final grade in the course will be

lowered by one partial letter grade (i.e.: A to A- or B+ to B) for every cut class. Lateness will be noted and count towards cuts – two tardies equals one absence. Anyone missing more than three classes should seriously consider dropping the class.

EXPECTED WORK LOAD: You should expect to work between 4 and 10 hours per week preparing for this class. This includes reading the text, reading other professional journals and books, doing research online, studying, working on projects, and preparing for class presentations. When you begin your pre-student teaching field experience you will also spend time researching and preparing lessons and activities for your students, journaling, and completing your portfolio.

EXTRA CREDIT: Make sure you know the requirements for all assignments and have fulfilled them prior to submitting your assignments. You may not redo assignments for better grades. There are no extra assignments for extra credit.

WRITING CENTER: You are encouraged to submit your assignments to someone at the Writing Center for proofing prior to submitting them for grades. The Writing Center is located in a building that is not accessible to persons with mobility impairments. If you need the services of the Writing Center, please call 610-861-1392.

STUDY GROUPS: You are encouraged to form a study group to discuss the material in your textbooks and to help you prepare for tests.

SPECIAL NEEDS: Students who wish to request accommodations in this class for a disability should contact Mr. Joe Kempfer, Assistant Director of Learning Services for Disability Support, 1307 Main Street (extension 1510). Accommodations cannot be provided until authorization is received from the office of Learning Services. Comenius Center students who wish to disclose a disability and request accommodations for this course must contact the Dean of the Comenius Center, (extension 1400). Students are encouraged to contact the appropriate individual as soon as possible to enhance the likelihood that accommodations are implemented in a timely fashion. Accommodations cannot be provided until the instructor has received appropriate authorization.

ACADEMIC HONESTY POLICY: The Moravian College policy on academic honesty will be followed. A copy of the policy is included in the Student Handbook and is also available upon request from your instructor. A copy of the College guidelines concerning plagiarism is included on the Blackboard site. As you do your written assignments, keep in mind, if it is someone else's thoughts or writing, you must give credit. Whether you are quoting or paraphrasing, you must give credit. Plagiarism is serious and may prevent you from being approved for student teaching. All violations of academic honesty reported to the Dean are shared with the Teacher Education Committee at the time the candidate's application for student teaching is being considered. In the past, such violations have prevented the Committee from approving some candidates for student teaching

CELL PHONES: Make sure all cell phones, pagers, etc. are turned off prior to the beginning of class. Cell phones may not be visible during class – no texting, surfing, etc.

ATTIRE: Although you do not have to dress for class as if you were attending your field experience, you are expected to be presentable. Hats (caps) may not be worn in class unless they are part of a costume for a presentation. When you are doing a formal presentation to the class, dress professionally.

This syllabus is subject to change.