University of Massachusetts Global A nonprofit affiliate

Course Number, Title and Credits

MATU 206 - Mathematics for Elementary School Teachers I - 3 credits

Course Catalog Description

This course is the first in a two-part mathematics sequence for prospective elementary school teachers. Addressing Common Core and National Council of Teachers of Mathematics Standards, instruction will include problem solving, pattern recognition, critical reasoning, estimation, logic, number theory, properties of sets, operations on real numbers, divisibility, proportions, and percents. 3 credits

Learning Outcomes and Assessment

Learning Outcomes are statements that specify what learners will know, understand, or be able to demonstrate at the end of a learning experience.

Types of Learning Outcomes include:

- Course Learning Outcome – Result of finishing a course.
- Program Learning Outcome – Result of finishing a program.
- Institutional Learning Outcome – Result of finishing a degree at an institution, reflecting the core learning values and experiences of all graduates.

A Signature Assignment is an assignment used to measure a student's mastery of a program or institutional learning outcome. If a course you are taking includes a Signature Assignment, it will be clearly marked (**SIGNATURE ASSIGNMENT**).

Click here to access information on the Program Learning Outcomes (PLOs) and/or Institutional Learning Outcomes (ILOs) and Curriculum Map related to this course.

Essential Equipment

All students must have reliable access to a working computer with Internet access throughout each week of the class. Each student will need to be able to access and work in the University's online Learning Management System, Blackboard. For more information about personal computer requirements click here.

Academic Integrity

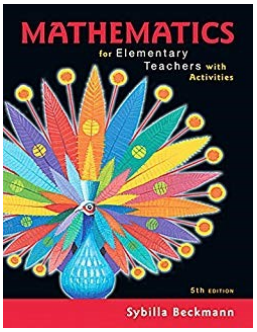
As a learning community of scholars, the University of Massachusetts Global emphasizes the ethical responsibility of all its members to seek knowledge honestly and in good faith. Students are responsible for doing their own work, and academic dishonesty of any kind will not be tolerated. "Violations of academic integrity include, but are not limited to, cheating, plagiarism, or misrepresentation of information in oral or written form. Such violations will be dealt with severely by the instructor, the dean/center director, and the standards committee. Plagiarism means presenting someone else's idea or writing as if it were your own. If you use someone else's idea or writing, be sure the source is clearly documented." Other guidelines for acceptable student behavior are specified in the University Catalog.

UMass Global online library resources: https://www.chapman.edu/library/umassglobal

University Policies

Students are responsible for complying with university policies including, but not limited to: incompletes, course drops, and student conduct. Information may be found in the Brandman University Catalog: http://catalog.brandman.edu/

Required Textbooks



Mathematics for Elementary Teachers, with Activities w/MyLab Math
978-0134751689
Sybilla Beckmann
Pearson Education, Inc.
2018
5th

All student textbooks are available at the University of Massachusetts Global Bookstore:

https://www.bkstr.com/umassglobal/home

Course Learning Outcomes

1. Examine and Discuss the Common Core Standards for Mathematics and the National Council of Teachers of Mathematics Principles and Standards for School Mathematics

2. Apply Polya’s four-step problem-solving process and strategies to analyze and solve mathematical problems.

3. Understand and apply number sense and base-10 concepts.

4. Analyze and evaluate addition and subtraction properties.

5. Analyze and evaluate multiplication and division properties.

6. Apply number theory to multiplication of fractions, decimals, negative numbers, and powers and scientific notation.

7. Apply number theory to prime and composite numbers, divisibility, greatest common factor, least common multiple, rational and irrational numbers, and factors and multiples.

8. Analyze and determine effective means of teaching and understanding proportion, ratio, and percent and their applications.

9. Analyze and apply algebraic principles to equations, numerical expressions, sequences, functions, and linear relationships.

10. Create and synthesize mathematical models to understand quantitative relationships and solve problems.

Major Study Units

1. Numbers and Base-ten System
2. Fractions and Problem Solving
3. Addition and Subtraction
4. Multiplication
5. Multiplication of Fractions, Decimals, and Negative Numbers
6. Division
7. Ratio and Proportional Relationships
8. Number Theory
9. Algebra

Instructional Strategies

This class includes readings, textual and video instruction, exercises, discussions, and projects. Instructional Strategies are further explained in the Blackboard course shell.

Attendance Policy

Requirements for student attendance and participation will be defined by each instructor based on the following policy:

- Monday of the first week is considered the first day of class for online and blended instruction. This includes instruction for fully online classes and online instruction supporting blended classes.
- Regular onsite attendance is expected for student success. If a student misses more than one onsite class or one week of engagement in an online class, the student may, at the discretion of the instructor, fail the course. Students are expected to attend all classes, particularly the first night of class.
- Students who will miss more than one class have the responsibility to discuss their attendance with the instructor in advance. Students should also consider withdrawing from a course if they will be absent more than once. Instructors may, but are not obligated to, accommodate students under extraordinary circumstances, but the student must request accommodation and provide requested supporting documentation.
- If a student misses a portion (e.g., arriving late or leaving early) of an onsite course, the student's grade may be adversely affected. Students who are not in attendance for at least 75 percent of any scheduled class may be considered absent for that class. Students should discuss missing portions of a class with their instructor to determine how their grade may be affected.
- Regular online attendance/participation and engagement is expected for student success in both fully online and blended courses. Online participation is evident through posting to a discussion board, wiki, virtual office or classroom meeting, a drop box, attending a virtual seminar, completing real-time activities or quizzes, or other course-related activities (synchronous or asynchronous).
- Schools and programs may have different attendance policies. Refer to school and program specific information for additional attendance policies.

Letter Grade/Percentage Equivalents

Grade Point System
(Rounded up at .5 and up)

A = 94%-100%	B = 84%-86%	C = 74%-76%	D = 64%-66%
A- = 90%-93%	B- = 80%-83%	C - =70%-73%	D - = 60%-63%
B+ = 87%-89%	C+ = 77%-79%	D+ = 67%-69%	F = 59% and below

Methods of Evaluation for Determining Grades

Assignment Detail for Fully Online Course:

Assignments for Blended Course (Rubrics in Course Information on Blackboard)	**Total Possible Points**
Lecture Readings and video lectures will be posted on Blackboard.	
Discussion Board (16@ 10pts) Participate in 16 discussion board forums, each worth 10 points. Questions correspond to weekly topics. Initial posts due by Thursday at 11:59 pm, two peer responses for each discussion due by Sunday 11:59 pm. The final week, initial responses due by Wednesday at 11:59 pm, peer responses due Friday, 11:59 pm.	160
Homework (16@ 20pts) MyMathLab homework assignments are found on www.coursecompass.com. There are sixteen 20-point homework assignments: two per week. You may repeat each question until you get the correct answer.	320
Math Multiplication/Division Strategies Presentation Students will create an original 3-5 minute (5-8 slides) presentation highlighting a minimum of 2 strategies that can be used to teach students the concept of multiplication and/or division. You will choose a technology tool that you will use for your presentation (a narrated PowerPoint, a narrated Prezi, a YouTube video, or something that is a combination of tools such as Jing or Screencast-o-Matic). Your presentation needs to contain visual demonstrations of the strategies chosen (i.e. pictures/video of you utilizing these with a child), a rationale for your choices, a discussion on how these specific strategies will help students learn the content, and explain the relationship between multiplication and division and at least one other math	50

concept (i.e. fractions). This is to be original work, but also based on research, actual teacher experiences, etc. All sources, including publicly available images, will need to be cited in a reference section at the end of your presentation. See directions and rubric in Week 4 for more information. This assignment is due Sunday (11:59 pm) of Week 4.	
Final Project-History of Math Presentation Students will create a 5-7 minute (10-15 slides) visual/oral presentation based on one math domain/content standard topic we discussed throughout the course and how it has been learned/taught throughout history. This will include a timeline, specific teaching examples, visuals, teaching practices and strategies, and other artifacts that represent different periods of time as it relates to your chosen math concept. It must also contain research and why there have been shifts in teaching/learning your specific concept. You will choose a technology tool that you will use for your presentation (a narrated PowerPoint, a narrated Prezi, a YouTube video, or something that is a combination of tools such as Jing or Screencast-o-Matic). All sources, including publicly available images, will need to be cited in a reference section at the end of your presentation. See directions and rubric in Week 7 for more information. This assignment is due Sunday (11:59 pm) of Week 7.	70
Final Exam A 50-question final covering the material learned throughout this class is found on MyMathLab/Course Compass. Questions may be repeated until you get the question correct.	100
	Total - 700

Class by Class Outline for Fully Online Course:

Week	Topics	Assignments

Week 1	Numbers and Base-ten System Fractions and Problem Solving	Read Chapters 1 and 2 (pp. 2-38; 42-90) Homework 1 and 2 Discussion Board
Week 2	Addition and Subtraction	Read Chapter 3 (pp. 93-140) Homework 3 and 4 Discussion Board
Week 3	Multiplication	Read Chapter 4 (pp. 143-193) Homework 5 and 6 Discussion Board
Week 4	Multiplication of Fractions, Decimals, and Negative Numbers	Read Chapter 5 (pp. 197-220) Homework 7 and 8 Discussion Board Math Multiplication/Division Strategies Presentation
Week 5	Division	Read Chapter 6 (pp. 223-278) Homework 9 and 10 Discussion Board
Week 6	Ratio and Proportional Relationships	Read Chapter 7 (pp. 282-333) Homework 11 and 12 Discussion Board
Week 7	Number Theory	Read Chapter 8 (pp. 337-376) Homework 13 and 14 Discussion Board Final Project-History of Math Presentation
Week 8	Algebra	Read Chapter 9 (pp. 379-448) Homework 15 and 16 (Due Friday)

		Discussion Board (Initial post due Wednesday; Peer posts due Friday) Final Exam (Due Saturday)

Methods of Evaluation for Determining Grades

Assignment Detail for Blended Course:

Assignments for Blended Course (Rubrics in Course Information on Blackboard)	Total Possible Points
Lecture Readings and video lectures will be posted on Blackboard.	
Discussion Board (16@ 10pts) Participate in 8 discussion board forums, each worth 10 points. Questions correspond to weekly topics. Initial post due by Thursday at 11:59 pm, two peer responses due by Sunday 11:59 pm.	160
Homework (16@ 20pts) MyMathLab homework assignments are found on www.coursecompass.com. There are sixteen 20-point homework assignments: two per week. You may repeat each question until you get the correct answer.	320
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		Discussion Board (Initial post due Wednesday; Peer posts due Friday) Final Exam (Due Saturday)

Americans with Disabilities Act Statement

For students who require disability-related services or accommodations to access to their educational experience can register with the Office of Accessible Education (OAE). The Office of Accessible Education (OAE) is committed to ensuring equal educational access and opportunity for all members of our academic community. Students will be provided equitable and reasonable accommodations and services that are in compliance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 (ADA)/Americans with Disabilities Act Amendments Act of 2008 (ADAA). Registration with OAE is on a voluntary, self-identifying basis. Please visit the Office of Accessible Education (OAE) website for more information about how to register for services, eligibility requirements, and information about potential academic accommodations and services.

UMass Global's Behavioral Intervention Team

The University of Massachusetts Global Behavioral Intervention Team (BIT) addresses situations in which students, faculty, staff, vendors, contractors, or general visitors are displaying behaviors that are concerning, disruptive, or threatening in nature and that potentially impede their own or others' ability to function successfully or safely. The mission of the University Behavioral Intervention Team is to provide a proactive and supportive multidisciplinary team approach to prevention, assessment, and early intervention of situations or individuals that may pose a threat to the safety and wellbeing of themselves or the University community as a whole.

It is the responsibility of faculty, staff, and students to immediately report any situation that could possibly result in harm to anyone at the University to the BIT by calling 949-383-3119, emailing safe@umassglobal.edu, or by filling out the BIT referral form here. For more additional information on the University Behavioral Intervention Team, please visit our website here. A "crisis" is defined as a situation in which a person may pose an active or immediate risk of violence to self or others.In these cases, the local police should be contacted by calling 911.

UMass Global's Title IX Statement

The University of Massachusetts Global strives to maintain and foster a climate that promotes respect and human dignity. Sexual misconduct and relationship violence in any form is antithetical to the university's mission and core values, violates university policies, and may also violate federal and state law. The office of Title IX is primarily concerned for students' safety and well-being and is tasked with investigating all reports of sexual misconduct experienced by our community members. Title IX prohibits sex-based and gender-based discrimination and harassment, which includes discrimination based on pregnancy and/or pregnancy-related complications, parental status, and marital status. Students expecting or experiencing pregnancy-related complications, that may require educational accommodations, should contact the University's Title IX Coordinator and/or the Office of Accessible Education.

The University and Title IX's prohibition of sex discrimination also covers sexual harassment, sexual violence, and any other form of sexual misconduct. We offer options and resources to all students affected by these issues and are committed to providing a fair, thorough, and prompt investigation and adjudication process. If you or someone you know has been impacted by sexual assault, dating, and domestic violence, stalking, or sexual exploitation, please visit the University's Title IX Resource Page to access additional resources and information.

UMass Global's staff and faculty are tasked with reporting any possible sex or gender-based discrimination or Title IX violations to the University's Title IX Coordinator at civilrightscomplaints@umassglobal.edu.

Click on this Link to our University Title IX Policy