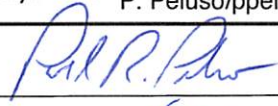

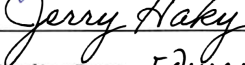
 FLORIDA ATLANTIC UNIVERSITY	COURSE CHANGE REQUEST Undergraduate Programs		UUPC Approval <u>3-1-21</u> UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____
	Department Teaching and Learning College Education		
Current Course Prefix and Number MAE 4310		Current Course Title Mathematics Content and Standards for K-6 Teachers	
<i>Syllabus must be attached for ANY changes to current course details. See Checklist. Please consult and list departments that may be affected by the changes; attach documentation.</i>			
Change title to: Change prefix From: _____ To: _____ Change course number From: _____ To: _____ Change credits* From: 2 To: 3 Change grading From: _____ To: _____ Change WAC/Gordon Rule status** Add <input type="checkbox"/> Remove <input type="checkbox"/> Change General Education Requirements*** Add <input type="checkbox"/> Remove <input type="checkbox"/> <small>*Review Provost memorandum</small> <small>**WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to this form. See WAC Guidelines.</small> <small>***General Education criteria must be indicated in syllabus and approval attached to this form. See GE Guidelines.</small>		Change description to: Change prerequisites/minimum grades to: Change corequisites to: Change registration controls to: Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade (default is D-).	
Effective Term/Year for Changes: Summer 2021		Terminate course? Effective Term/Year for Termination:	
Faculty Contact/Email/Phone P. Peluso/ppeluso@fau.edu/7-3570			
Approved by Department Chair <u></u> College Curriculum Chair _____ College Dean <u></u> UUPC Chair <u></u> Undergraduate Studies Dean <u>Edward Pratt</u> UFS President _____ Provost _____		Date <u>1/22/21</u> <u>2/5/21</u> <u>2/9/2021</u> <u>3-2-21</u> <u>3-2-21</u> _____ _____	

Email this form and syllabus to mjennning@fau.edu seven business days before the UUPC meeting.



Department of Teaching & Learning

Course Title: Mathematics Content and Standards for K-6 Teachers

Course Number: MAE 4310

Credit Hours: 3 Semester Hours

Contact Hours: Class meets for a total of 3 contact hours

Prerequisites: 6 semester hours of college-level math (grade “C” or higher earned)

Course Logistics:

- **Terms:** fall, spring, summer
- **Classroom-based course**
- **Class location and time:** Davie, Boca, Jupiter (time not available)

Instructor: To be determined

Office Address/Office Hours: To be determined

Phone Number/Email: To be determined

TA contact information: Not applicable

Catalog Description:

An in-depth review of content knowledge required to effectively teach mathematics grades K-6. This course provides a meaningful approach to learning the Florida Mathematics Standards (K-6) while emphasizing the competencies needed for successfully passing the Florida Teacher Certification Examination (FTCE).

Course Connection to the College of Education (COE) Conceptual Framework:

As reflective decision-makers students will make informed decisions, exhibit ethical behavior, and provide evidence of being capable professionals who have mastered the mathematics content knowledge necessary to document emerging numeracy/mathematics development, develop lessons plans that demonstrate respect for the developmental characteristics of young people and needs of ESOL students, follow the standards for mathematical practice, and demonstrate the capability to teach and respect all young people.

Required Texts/Readings: Not applicable. Please see **Special Course Requirements**.

Special Course Requirements:

- Triman Compass, crayons or markers, scissors, glue stick, composition notebook, GeoGebra.
- Software Package IXL.com Mathematics, students must sign up for and go through the K-8 software and submit evidence of competence.
- Students in this course are required to have an active *LiveText* account to track mastery of programs skills, competencies and critical assignments, and to meet program and college accreditation requirements. To receive a passing grade in this course, you must have a *LiveText* account within the first four (4) weeks of the fall or spring semester, within the first three (3) weeks of summer session, or after the first class of a fast track course. Students who do not have an active *LiveText* account may have an academic hold placed on their records. For information regarding account activation, please go to the COE website at: <http://coe.fau.edu/livetext>. For information pertaining to financial assistance, please go to: <http://www.coe.fau.edu/livetext/livetextfinancialassistane.htm>.

Supplementary/Recommended Readings:

- Bassarear, T. (2015). *Mathematics for elementary school teachers (6th ed.)*. Boston, MA: Houghton Mifflin.
- Billstein, R., Libeskind, S., & Lott, J. (2015). *A problem solving approach to mathematics for elementary school teachers (12th Edition)*. Upper Saddle River, NJ: Pearson Education, Inc.
- Common Core State Standards Initiative for Mathematics at: <http://www.corestandards.org/math>.
- Musser, G., Peterson, B., & Burger, W. (2013). *Essentials of mathematics for elementary teachers: A contemporary approach*. Boston, MA: John Wiley & Sons Publishing, Inc.
- National Council of Teachers of Mathematics. (2006). *Curriculum Focal Points*. NCTM: Reston, VA: Author.
- National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. NCTM: Reston, VA.
- National Council of Teachers of Mathematics. (1989). *Curriculum and evaluation standards for school mathematics*. NCTM: Reston, VA.
- Parrish, S. (2014). *Number Talks: Helping children build mental math and computation strategies*. Sausalito, CA: Math Solutions.
- Reys, R., Lindquist, M., Lambdin, D., Smith, N. & Suydam, M. (2015). *Helping children learn mathematics (11th Ed)*. Boston, MA: John Wiley & Sons Publishing, Inc.
- State of Florida. Florida Department of Education Mathematics Curriculum Framework at: <http://www.fldoe.org/pdf/mathfs.pdf>.

Standards and Guidelines Used for Developing Course Objectives:

- Elementary and Middle School Education K-6 Subtest in Mathematics (FTCE)
<http://www.fldoe.org/core/fileparse.php/3/urlt/ftce19edition.pdf>
- Florida Mathematics Standards (K-6) (MAFS)
<http://www.fldoe.org/core/fileparse.php/7575/urlt/mathfs.pdf>
- National Council of Teachers of Mathematics Curriculum and Evaluation Standards for School Mathematics (NCTM) at: www.nctm.org

Course Objectives/Student Learning Outcomes (NCTM):

- 1. Demonstrate content knowledge and application of number sense/estimation/mental calculation as well as fractions, decimals, ratios, percents, proportions, and number theory.**

Florida Mathematics Standards K-6 :

- MAFS.K.CC. - 1.1, 1.2, 1.3, 2.4, 2.5, 3.6, 3.7
- MAFS.K.NBT. - 1.1
- MAFS.1.NBT. - 1.1, 2.2, 2.3, 3.4, 3.5, 3.6;
- MAFS.2.NBT. - 1.1, 1.2, 1.3, 1.4, 2.5, 2.6, 2.7, 2.8, 2.9
- MAFS.3.NBT. - 1.1, 1.2, 1.3
- MAFS.3.NF. - 1.1, 1.2, 1.3
- MAFS.4.NBT. - 1.1, 1.2, 1.3, 2.4, 2.5, 2.6
- MAFS.4.NF. - 1.1, 1.2, 2.3, 2.4, 3.5, 3.6, 3.7
- MAFS.5.NBT. - 1.1, 1.2, 1.3, 1.4, 2.5, 2.6, 2.7
- MAFS.5.NF. - 1.1, 1.2, 2.3, 2.4, 2.5, 2.6, 2.7
- MAFS.6.RP. - 1.1, 1.2, 1.3
- MAFS.6.NS. - 1.1, 2.2, 2.3, 2.4, 3.5, 3.6, 3.7, 3.8

- 2. Demonstrate content knowledge and applications of geometry & spatial sense concepts.**

Florida Mathematics Standards K-6:

- MAFS.K.G. - 1.1, 1.2, 1.3, 2.4, 2.5, 2.6
- MAFS.1.G. - 1.1, 1.2, 1.3
- MAFS.2.G. - 1.1, 1.2, 1.3
- MAFS.3.G. - 1.1, 1.2
- MAFS.4.G. - 1.1, 1.2, 1.3
- MAFS.5.G. - 1.1, 1.2, 2.3, 2.4
- MAFS.6.G. - 1.1, 1.2, 1.3, 1.4

- 3. Demonstrate content knowledge and application of measurement concepts.**

Florida Mathematics Standards K-6:

- MAFS.K.MD. - 1.1, 1.a, 1.2, 2.3
- MAFS.1.MD.- 1.1, 1.a, 2.3, 2.a, 3.4
- MAFS.2.MD. - 1.1, 1.2, 1.3, 1.4, 2.5, 2.6, 3.7, 3.8, 4.9, 4.10
- MAFS.3.MD. - 1.1, 1.2, 2.3, 2.4, 3.5, 3.6, 3.7, 4.8
- MAFS.4.MD. - 1.1, 1.2, 1.3, 2.4, 3.5, 3.6, 3.7
- MAFS.5.MD. - 1.1, 2.2, 3.3, 3.4, 3.5

- 4. Demonstrate content knowledge and application of math as the science of patterns and order and which involve patterns, which lead to algebraic thinking and understanding.**

Florida Mathematics Standards K-6:

- MAFS.K.OA. - 1.1, 1.2, 1.4, 1.5, 1.a
- MAFS.1.OA. - 1.1, 1.2, 2.3, 2.4, 3.5, 3.6, 4.7, 4.8
- MAFS.2.OA. - 1.1, 1.a, 2.2, 3.3, 3.4
- MAFS.3.OA. - 1.1, 1.2, 1.3, 1.4, 2.5, 2.6, 3.7, 4.8, 4.9
- MAFS.4.OA. - 1.1, 1.2, 1.3, 1.a, 1.b, 2.4, 3.5
- MAFS.5.OA. - 1.1, 1.2, 2.3

5. Demonstrate content knowledge and application of statistics and data analysis, students should be able to use, collect, and analyze data to make informed decisions.

Florida Mathematics Standards K-6:

- MAFS.6.EE. - 1.1,1.2, 1.3, 1.4, 2.5, 2.6, 2.7, 2.8, 3.9

6. Demonstrate content knowledge and application of probability where students analyze and perform games of chance and use the data to predict outcomes and make decisions.

Florida Mathematics Standards K-6:

- MAFS.6.SP. - 1.1, 1.2, 1.3, 2.4, 2.5,
- MAFS.6.EE. - 1.1, 1.2, 1.3, 1.4, 2.5, 2.6, 2.7, 2.8, 3.9

7. Demonstrate the use of technology used when doing mathematics. Students should be able to work with and operate emerging technologies such as GeoGebra and fraction and graphing calculators used today to do mathematics.

Florida Mathematics Standards K-6:

- MAFS.K.MD. - 1.1, 1.2, 1.a, 2.3
- MAFS.1.MD. - 1.1, 1.a, 2.3, 2.a, 3.4,
- MAFS.2.MD. - 1.1, 1.2, 1.3, 1.4, 2.5, 2.6, 3.7, 3.8, 4.9, 4.10
- MAFS.3.MD. - 1.1, 1.2, 2.3, 2.4, 3.5, 3.6, 3.7, 4.8
- MAFS.4.MD. - 1.1, 1.2, 1.3, 1.4, 2.4, 3.5, 3.6, 3.7,
- MAFS.5.MD. - 1.1, 2.2, 3.3, 3.4, 3.5
- MAFS.6.G. - 1.2, 1.4

8. Demonstrate understanding and application of problem solving, as well as describe and employ problem solving process and strategies to solve complex math problems in all math content areas.

Florida Mathematics Standards K-6:

- MAFS.K.OA. - 1.1, 1.2, 1.4, 1.5, 1.a
- MAFS.1.OA. - 1.1, 1.2, 2.3, 2.4, 3.5, 3.6, 4.7, 4.8
- MAFS.2.OA. - 1.1, 1.a, 2.2, 3.3, 3.4
- MAFS.3.OA. - 1.1, 1.2, , 1.3, 1.4, 2.5, 2.6, 3.7, 4.8, 4.9
- MAFS.4.OA. - 1.1, 1.2, 1.3, 1.4, 1.a, 1.b, 2.4, 3.5
- MAFS.5.OA. - 1.1, 1.2, 2.3

Please note in the Content Topical Outline (beginning next page) when all homework from math journal problems (JP) is due to be discussed in class. Have all homework and questions in your journal ready to share with the class along with your math journal problem solving.

Content Topical Outline: Access to required online readings to be discussed in class.

Week	Topics
#1	Introduction: FTCE ELEM: 1.1, 1.2, 1.3, 2.7, 3.1, 3.2, 3.3, 3.4, 3.5, 4.3, 4.5 FTCE GK: 1.1, 1.2, 1.3, 2.3, 2.4 <ul style="list-style-type: none"> • Syllabus Introduction. • Pre-Test Content Knowledge Competency Test. • Assessment - Pre-test content knowledge competency test.
#2	Number Sense: FTCE ELEM: 2.5, 2.6, 2.8 <ul style="list-style-type: none"> • Quantity indicators of number sense. • Values of quantities. Discussion of CPALMS formative assessments. • Journal - Research different algorithms used for arithmetic in other cultures.
#3	Place Value and Expanded Notation: FTCE ELEM: 1.2, 2.3, 2.4, 2.8, 3.3 <ul style="list-style-type: none"> • Exploding dots activity (MAA). • Place value and expanded notation. Introduction to operations in base 10. • Journal - Research two different number systems used in ancient cultures.
#4	Operations in Other Place Values/Bases: FTCE ELEM: 1.3, 2.7, 3.3 FTCE GK: 1.1, 1.2, 1.3 <ul style="list-style-type: none"> • Operations in different bases. • Place value for decimals. • Journal - Choose a base, describe its numbers, expanded notation, and arithmetic.
#5	Whole and Decimal Number Operations: FTCE ELEM: 2.2, 2.3, 2.4, 3.1, 3.3, 3.4, 3.5 FTCE GK: 1.1, 1.2, 3.1 <ul style="list-style-type: none"> • Additive combinations and comparisons. • Ways of thinking about addition, subtraction, multiplication and division. • Mental computation techniques. Computational estimation. Estimating values of quantities. • Journal - Research Scientific Notation and give examples of its use.
#6	The Meaning of Fractions: FTCE ELEM: 3.3, 3.4 FTCE GK: 1.3 <ul style="list-style-type: none"> • Understanding the meanings of a/b. • Equivalent fractions. Differences between equality and equivalence. • Relating fractions, decimals and percents. Fundamental differences. • Comparing fractions. • Interpretations of rational numbers (part-whole, measure, quotient, ratio, scalar). • Modeling rational numbers. • Journal - Define rational and irrational numbers and be able to recognize each. Describe the numbers that are real numbers.
#7	Computing with Fractions: FTCE ELEM: 2.7, 3.3, 3.5 FTCE CK: 1.1, 1.2, 1.3, 2.2 <ul style="list-style-type: none"> • Adding and subtracting fractions. What it means and how these operations are represented. Word problems. • Multiplying by a fraction. Multiplying fractions. Dividing by a fraction. Dividing fractions. Different word problems. • Journal - Write word problems that illustrate the different operations (and views of the operations), and recognize which view a particular problem fits. • Assessment - FSA Test 1

#8	<p>Ratios, Rates, Proportions, and Percents: FTCE ELEM: 2.7, 2.8 FTCE GK: 1.1, 1.2, 1.3</p> <ul style="list-style-type: none"> Fractions in multiplicative comparisons. Ratio as measure. Comparing ratios. Proportional reasoning. Percents in comparison and changes (increase, decrease, taxes). Calculating percents mentally. Estimate percents. Journal - Compare and contrast an additive comparison with a multiplicative comparison. Distinguish between ratios and fractions and in the manner in which they are used. Give examples. Give examples of problems that require a multiplicative approach to solve.
#9	<p>Number Theory: FTCE ELEM: 1.3, 2.1, 2.6, 3.2, 3.4, 3.5, 4.3, 4.5 FTCE GK: 3.3, 3.4, 3.5</p> <ul style="list-style-type: none"> Factors and multiples. Primes and composite. Prime factorization. Divisibility tests. Greatest common factor. Least common multiple. Word problems. Journal - State the fundamental theorem of arithmetic. Use the theorem to determine whether or not a number is a factor of another number when both numbers are in factored form. Explain why the square root test provides a way to know which prime numbers (at most) need to be tested when determining whether or not a prime number is actually a prime number. Assessment - FSA Quiz 1
#10	<p>Word Problems and Patterns: FTCE ELEM: 1.1, 1.4, 1.5, 1.6, 1.7, 2.1, 2.2, 2.3 FTCE GK: 3.1-3.7</p> <ul style="list-style-type: none"> Problem-solving process and strategies. Polya's steps. Practice. Continue practicing with problem-solving. Journal - Research about Pascal's Triangle. Explain at least 3 patterns found in it.
#11	<p>Polygons and Symmetry: FTCE ELEM: 5.2, 5.4 FTCE GK: 2.1</p> <ul style="list-style-type: none"> Polygon vocabulary. Triangles and quadrilaterals. Polyhedra. Symmetry of shapes in the plane. Symmetry of polyhedra. Journal - Research about regular and semi-regular tessellations. Create your own tessellation in GeoGebra. Assessment - FSA Quiz 2
#12	<p>Perimeter, Area, Surface Area, and Volume: FTCE ELEM: 5.1, 5.2, 5.3, 5.4 FTCE GK: 2.1</p> <ul style="list-style-type: none"> Perimeter and area (formulas and problems). Irregular shapes. Surface area and volume (formulas and problems). Journal - Research on Pick's Theorem. Give examples.
#13	<p>Transformation Geometry: FTCE ELEM: 4.3, 4.4, 4.5, 5.1, 5.3 FTCE GK: 2.2-2.6, 2.8</p> <ul style="list-style-type: none"> Types of rigid motions. Finding images for rigid motions. Composition of rigid motions. GeoGebra and rigid transformations. Dilations. Journal - Using GeoGebra, perform some transformations and composition of transformations. Assessment - FSA Quiz 3
#14	<p>Introduction to Probability: FTCE ELEM: 4.1, 4.2 FTCE GK: 4.1-4.6</p> <ul style="list-style-type: none"> Probability and simple experiments. Probability and complex experiments. Odds. Conditional probability. Expected value. Journal - Research about probability in Pascal's Triangle. Assessment - Post-test content knowledge (competency test).
#15	<p>Introduction to Statistics: FTCE ELEM: 4.4 FTCE GK: 4.5, 4.6, 4.7</p> <ul style="list-style-type: none"> Organizing and picturing information. Analyzing data. Journal - Research about z-scores and how they are used in the school system. Assessment - FSA Quiz 4
#16	Submit Journal - Final Examination

Course Assignments/Requirements:

Assignments will include, but will be not limited to, the following: class work, homework, tests and quizzes, IXL.com/computer/GeoGebra activities, and math journal problem solving. All assignments turned in for a grade must have a rubric grading sheet attached to them. **All work must be word-processed and handed-in on LiveText if it is a critical assignment.**

As requested by university administration, all students should use their FAU MYFAU E-mail for the course when communicating with the instructor.

For this course all written assignments should be word-processed and turned in with an attached rubric-grading sheet. All assignments are due on the date which appears here in the syllabus, no assignment will be accepted for a grade after the due date, please see the professor for special needs. Please refer to the descriptions as follows:

(1) Journal

Keep a Math Problem-Solving Journal in a composition notebook. You will receive specific assignments and instructions throughout the semester (approximately one each week). You are to do each of the assignments in your notebook describing all steps, problem-solving process/strategies used, **and especially your problem-solving thinking processes written in detail for full credit.** You will be graded on your effort, completion of the problems, and thinking processes. Please feel free to write about feelings and anything else you confront as you do the problems. **Also**, read each chapter in your textbook and include a short one paragraph summary/reflection in your notebook. MAE Students must pass this **critical assignment with at least "Meets Expectations"** based on the 3-Point rubric for the assignment. You will be allowed a chance for feedback and **remediation** if you "Do Not Meet Expectations," so that revisions can be made to improve the critical assignment. You will be given sufficient support and guidance to successfully meet expectations for the critical assignment.

Journal Grade Sheet

Criteria	Possible Points	Points Earned
Detailed Problem Solving	200	
Problem Solving Strategy identified	20	
Math Standards covered in problem	20	
Thinking Processes in Solving problems Written Out	60	
In Depth thought process and reflection in solving	40	
Active Participation/Sharing/Number Talk in class	40	
Turned in with Grade Sheet	20	
Total	400	

Critical Assignment Title: Problem Solving and Content Knowledge Exercises

Objective(s): Solves math problems using the problem-solving process and applies problem-solving strategies showing reflection and critical thought in solving the mathematics problems and displaying content knowledge of the material in all the domains and grades for the elementary math curriculum.

Assessment: Math Problem Solving in math journal with process and standards covered.

Rubric for Journal

Performance	Criteria for Exceeds Expectations (E)	Criteria for Meets Expectations (M)	Criteria for Does Not Meet Expectations (D)	Rating
<p>Demonstrates accuracy of subject matter knowledge in the problem solving process.</p> <p>Demonstrates and models the use of higher-order thinking abilities, processes, and strategies.</p> <p>Uses ESOL, technology, and other strategies/tools in solving math problems and critical thought.</p> <p>Modifies and adapts math concepts with increased attention to the learners' creative thinking abilities/thought processes.</p>	<p>Complete accuracy demonstrated in the problem solving process.</p> <p>Chooses and applies a correct strategy and follows a clear thought process.</p> <p>Clearly identifies ESOL technology, and other strategies /tools/models used in problem solving and math content.</p> <p>Clear and sensible modifications of problem for the learner to understand thought processes. States math standard covered.</p>	<p>Partial arithmetic error, but shows good problem solving process.</p> <p>Uses a correct strategy but may lack process and/or explanation to solve.</p> <p>Shares some Technology or other tools/methods for problem solving and content with mathematics.</p> <p>In Number talk teaches/provides methods for showing the problem with some class support lacks math standard.</p>	<p>Incorrect arithmetic and problem solving process.</p> <p>Incorrect thinking process and strategies employed.</p> <p>Provides no Technology or other tools for problem solving and math content knowledge.</p> <p>Does not show/provide methodology for demonstrating the math problem or standard used.</p>	
Overall Rating/Points Earned:				
Improvements Needed:				
First Attempt Date:				
Second Attempt Date:				
Third Attempt Date:				

(2) Technology Evidence/Homework from IXL.com Software

IXL.com/Homework Grade Sheet

Criteria	Possible Points	Points Earned
Name, title, typed, grade sheet	10	
Evidence printed out of IXL.com work/progress	40	
Successful completion of all math domains	100	
Overall demonstration of success with all domains K-6	50	
Total	200	

(3) Tests and Quizzes and Content Knowledge Test

The dates for each of the tests and quizzes will be announced. Detailed instructions and a grading rubric will be included with each assessment. The last assessment, **Assessment #6** (described below), **is part of a new initiative - students will be required to take a Subject Matter Content Test** to demonstrate mastery of Subject Matter Content Standards: K-6 Mathematics. Students will receive a letter grade of E-Exceeds, M-Meets, or D for Does Not Meet. Students will take one Florida Standards Assessment (FSA) test (10%) in one math domain as well as take four (4) math quizzes (20%) similar to the FSA tests in the other four math domains. These are all forms of assessing content knowledge of the pre-service teacher candidate.

Assessment #6 Critical Assignment Subject Matter Content Test

MAE Students must pass this **critical assignment with at least "Meets Expectations"** based on the 3-Point rubric for the assignment. If you "Do Not Meet Expectations," you will be given feedback and **remediation**, and allowed to retake the examination. You will be given sufficient support and guidance to successfully meet expectations for the critical assignment.

Critical Assignment Title: Subject Matter Knowledge Test in Mathematics K-6.

Objective(s): Demonstrates mastery of mathematics subject matter knowledge by receiving at least a meets expectations and achieving a minimum score of 80% on the criterion referenced test administered during the semester.

Assessment: Subject Matter Knowledge Test in Mathematics.

Rubric for Subject Matter Content Assessment #6

Performance	Exceeds Expectations (E)	Meets Expectations (M)	Does Not Meet Expectations (D)	Rating
Demonstrates mastery of subject matter knowledge on either the pre or post CRT subject matter test.	Scores 80% or higher on the subject matter test on the first attempt.	Scores 80% or higher on the subject matter test after multiple attempts.	Scores less than 80% on the subject matter test.	
Overall Rating/ Points Earned:				
Improvements Needed:				
First Attempt Date:				
Second Attempt Date:				
Third Attempt Date:				

Teaching Methodologies:

Modeling, guided practice, at the board problem solving process, simulations, lecture, in-class and online discussions, internet communication (use of iReady, e-mail, websites, distance learning, Blackboard), power point/screen/overhead presentations by instructor and students, videos, computer, and other media.

Course Evaluation Method:

Item	Percentage of final grade
• 1 Content Test (pre and post must pass by 80% as a critical assignment)	10
• 1 Test in the Florida Standards Assessment (FSA) format on one domain (10-15 questions)	10
• 4 Quizzes in the Florida Standards Assessment (FSA) format on other domains (5-7 questions)	10
• Math Journal (in depth math problems related to content weekly)	40
• Technology Evidence, Homework/practice, Explorations	30

Grading Scale:

<i>Letter</i>	<i>Percent</i>	<i>Grade Pts</i>	<i>Letter</i>	<i>Percent</i>	<i>Grade Pts.</i>
A	95-100	= 4.0	C	75-78	= 2.0
A-	92-94	= 3.67	C-	72-74	= 1.67
B+	89-91	= 3.33	D+	68-71	= 1.33
B	85-88	= 3.00	D	65-67	= 1.00
B-	82-84	= 2.67	D-	62-64	= 0.67
C+	79-81	= 2.33	F	Below 62	= 0.00

Policy on Make-up tests, Late Work, and Incompletes:

For the most part there will be no make-up tests or assignments. **All assignments must be submitted on time.** Flexibility by the instructor regarding make-ups will be considered for each student's individual case. If you miss class or an assignment deadline due to an approved university activity (i.e., scholastic or athletic teams, musical or theatrical performances, and debate activities) preparations can be made on an individual basis with no penalty. According to University policy, "Students are expected to attend all of their scheduled University Classes and to satisfy all academic objectives as outlined by the instructor." Attendance includes meaningful, active involvement in all class sessions, class discussions, and class activities as well as professional, ethical, conduct in class. Reasonable accommodations are made for religious observances. The responsibility of attending class belongs to each student. The grade of Incomplete ("I") is reserved for students who are passing a course but have not completed all of the required work because of exceptional circumstances.

If you are absent, you must obtain the information and handouts missed from a classmate or from Blackboard. You are responsible for all information from each class session whether you are present or not. If you are tardy three times, it may be counted as one absence. If you miss more than one class you may lose points toward your final grade. Students must be on time for each class and stay for the entire class period to receive full credit for their attendance, cooperation,

and participation grade. Again, please be on time and attend each class in its entirety. Also, during clinical placement weeks, students must attend the school they are assigned to, to do their in-school clinical placement. Please be sure to dress professionally and be on time. According to University policy, “Students are expected to attend all of their scheduled University Classes and to satisfy all academic objectives as outlined by the instructor.” Attendance includes meaningful, active involvement in all class sessions, class discussions, and class activities as well as professional, ethical, conduct in class.

Classroom Etiquette Policy: (late arrivals, unexcused absences, electronic devices)

Final grades may be affected by late arrivals and unexcused absences. Unavoidable absences include: family emergencies, illness, military obligations, and court imposed legal obligations. Students will not be penalized for absences due to participation in University-approved activities, including athletic or scholastic teams, musical and theatrical performances, and debate activities. These absences must be accompanied by documentation. The instructor reserves the right to approve or disapprove any absence. Reasonable accommodation must also be made for students participating in a religious observance. University policy on electronic devices states: *In order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers, are to be disabled in class sessions.*

Dropping the Course: If you must drop this course, please complete all necessary forms. Otherwise, the instructor is required to enter a grade of “F” for the course.

Code of Academic Integrity policy statement:

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see the Code of Academic Integrity in the University Regulations University Regulations at:
<http://fau.eduregulations/chapter4/4.001> *Code of Academic Integrity.pdf.*

Use of Student Work:

All Teacher Education programs undergo periodic reviews by accreditation agencies and the state education department. For these purposes samples of students’ work are made available to those professionals conducting the review. Student anonymity is assured under these circumstances. If you do not wish to have your work made available for these purposes, please let the professor know before the start of the second class. Your cooperation is appreciated.

Attendance

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The instructor determines the effect of absences upon grades, and the University reserves the right to deal at any time with individual cases of nonattendance. Attendance includes active involvement in all class sessions, class discussions, and class activities, as well as professional conduct in class.

Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations, or participation in University-sponsored activities (such as athletic or scholastic team, musical and theatrical performances, and debate activities). It is the student's responsibility to give the instructor notice prior to any anticipated absence, and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

Religious Accommodation

In accordance with rules of the Florida Board of Education and Florida law, students have the right to reasonable accommodations from the University in order to observe religious practices and beliefs with regard to admissions, registration, class attendance and the scheduling of examinations and work assignments. Students who wish to be excused from course work, class activities or examinations must notify the instructor in advance of their intention to participate in religious observation and request an excused absence. The instructor will provide a reasonable opportunity to make up such excused absences. Any student who feels aggrieved regarding religious accommodations may present a grievance to the director of Equal Opportunity Programs. Any such grievances will follow Florida Atlantic University's established grievance procedure regarding alleged discrimination.

Disability Policy Statement:

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at www.fau.edu/sas/.

Counseling and Psychological Services (CAPS) Center

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>

Bibliography:

Books and Articles

- Bassarear, T. (2015). *Mathematics for elementary school teachers (6th ed.)*. Boston, MA: Houghton Mifflin.
- Billstein, R., Libeskind, S. & Lott, J. (2015). *A problem solving approach to mathematics for elementary school teachers (12th ed.)*. Upper Saddle River, NJ: Pearson Educ, Inc.
- Boaler, J. (2008). *What's math got to do with it? Helping children learn to love their least favorite subject--and why it's important for America*. New York, NY: Penguin Group (USA) Inc.
- Brahier, D. (2009). *Teaching secondary and middle school mathematics (3rd ed.)*. Boston, MA: Reason Education, Inc.
- Geist, E. (2009). *Children are born mathematicians: Supporting mathematical development, Birth to age 8*. Upper Saddle River, NJ: Pearson Education, Inc.
- Guillaume, A. & Kirtman, L. (2005). Learning lessons about lessons: Memories of mathematics instruction. *Teaching Children Mathematics*, 11 (6), 302-309.
- Musser, G., Peterson, B. & Burger, W. (2013). *Essentials of mathematics for elementary teachers: A contemporary approach*. Boston, MA: Wiley & Sons Pub. Inc. National Council of Teachers of Mathematics. (2000). *Principles and Standards for School Mathematics*; NCTM: Reston, VA.
- Parrish, S. (2014). *Number Talks: Helping children build mental math and computation strategies*. Sausalito, CA: Math Solutions.
- Reys, R., Lindquist, M., Lambdin, D., Smith, N. & Suydam, M. (2015). *Helping children learn mathematics (11th ed.)*. Boston, MA: John Wiley & Sons Publishing, Inc.
- Sherman, H., Richardson, L. & Yard, G. (2009). *Teaching learners who struggle with mathematics: Systematic intervention and remediation (2nd ed.)*. Upper Saddle River, NJ: Pearson Education, Inc.
- Sousa, D. (2008). *How the brain learns mathematics*. Thousand Oaks, CA: Corwin Press.
- Zemelman, S., Daniels, H. & Hyde, A. (2012). *Best practice: New standards for teaching and learning in America's school (4th ed.)*. Portsmouth, NH: Heinemann.

Journals & Magazines

Dimensions in Mathematics

Issues in the Undergraduate Mathematics Preparation of School Teachers

Journal for Research in Childhood Education

Journal for Research in Mathematics Education

Mathematics Teacher

Mathematics Teaching in the Middle School

Mathitudes Online at: <http://www.coe.fau.edu/mathitudes/>

Online Journal for School Mathematics (ON-Math)

School Science and Mathematics

Teaching Children Mathematics

Teaching Pre K-8

Internet

Florida Department of Education Electronic Curriculum Planning Tool, Software for the New Florida Curriculum Frameworks, Mathematics. Florida DOE at:

<http://www.cpalms.org/Public/>

Math Vantage Video Series at:

http://www.iptv.org/series.cfm/3449/math_vantage/ep:104/episodes

Marilyn Burns Manipulative Video Series 3

GeoGebraTube at: <http://tube.geogebra.org/>

The Beacon Learning Center Website at: <http://www.beaconlc.org/BEACON/default2.asp>

Blackboard Web-assisted Learning with FAU at: <http://www.blackboard.fau.edu>

IXL.com

Tenmarks.com

Nanyang Technological University Library at: <http://www.ntu.edu.sg/library/search/tools.htm>

Google <http://www.google.com>

Yahoo <http://www.yahoo.com>

Alta Vista <http://www.altavista.digital.com>

Ask Jeeves <http://www.ask.com>

Excite <http://www.excite.com>

HotBot <http://www.hotbot.com>

Lycos <http://lycos.com>

WiseNut <http://www.wisenut.com>

Proquest Please access using FAU's library/searching outlets, requires valid FAU account.

Websites

Note: If the address is not given, search using the title/name of the site. URLs may change.

National Council of Teachers of Mathematics at: www.nctm.org

Common Core State Standards at: <http://www.corestandards.org/the-standards/mathematics>

Funbrain at: www.funbrain.com

Fun School at: www.funschool.com

Math at: www.math.com

Cool Math at: www.coolmath.com

Math Archives (anything about mathematics) at: www.archives.math.utk.edu

Fun Math Lessons at: www.math.rice.edu

Beacon Learning Center Lesson Plans at: www.beaconlc.org

Marcopolo Standards-Based Lessons at: www.marcopolo-education.org

Ask Dr. Math at: www.forum.swarthmore.edu

ETA/Cuisenaire Math Manipulatives at:

www.etacuisenaire.com/catalog/department?deptId=MATH

Math Power and Professor Freedman's Math Help website at: www.mathpower.com

Key Curriculum Press, Geometer's Sketchpad Software

Common Core State Standards Initiative for Math at: <http://www.corestandards.org/math>

GeoGebra, free math software at: www.geogebra.org

Reports & Standards

Elementary and Middle School Education K-6 Subtest in Mathematics (FTCE)

<http://www.fldoe.org/core/fileparse.php/3/urlt/ftce19edition.pdf>

Florida Mathematics Standards (K-6) (MAFS)

<http://www.fldoe.org/core/fileparse.php/7575/urlt/mathfs.pdf>

National Council of Teachers of Mathematics Curriculum and Evaluation Standards for School Mathematics (NCTM) at: www.nctm.org

State of Florida DOE. *Florida Department of Education Curriculum Frameworks: Mathematics*

<http://www.fldoe.org/core/fileparse.php/5423/urlt/2007-NGSSS-Mathematics-WithoutAccessPoints.pdf>

The Third International Mathematics and Science Study Report www.timss.org

Common Core State Standards Initiative for Mathematics found at:

<http://www.corestandards.org/Math>

Professional Organizations

The National Council of Teachers of Mathematics (NCTM) at: www.nctm.org

The Florida Council of Teachers of Mathematics (FCTM)

American Educational Research Association (AERA)

National Governors Association and Council of Chief State School Officers Common Core State Standards Initiative for Mathematics found at: <http://www.corestandards.org/Math>

Please Note: In light of the implementation of new, required state standards, the Competency Assessments and rubrics within this course may change during the semester. If changes are made, you will receive advance notification.