OTTERBEIN
U N I V E R S I T Y

Course Number/Section and Title:	MATH 2100-01: Math for Early Childhood Education		
Semester and Year:	Spring 2018		
Course Meeting:	TR	12-1:45pm	Science 304
	Days	Time	Location
Credit Hours:	4	4	0
	Total Credit Hours	Lecture Credit Hours	Lab Credit Hours (if applicable)

Is this a Travel Course: ☐ Yes ☒ No

Instructor:	Matthew McMullen	mmcmullen@otterbein.edu
	First, Last	Email Address
	Towers 138	(614) 823-1279	www.otterbein.edu/fac/mmcmullen
	Office Location/Room #	Office Phone Number	Course webpage (for homework problems)
	MW 12-1pm
TR 2-3pm
MWF 10am-noon (tutoring in Math Lab)		
	Set Office Hours and Tutoring Hours (also available by appointment).		

Course Catalog Description

Exploration of mathematical content (patterns, numbers systems, geometry, measurement, probability, and data analysis) and processes (representations, reasoning, communication, connections, and technology), pertaining to the early childhood classroom. Theories of cognition concerning (i) concepts, (ii) skills, and (iii) problem-solving are also examined. (Prerequisite: MATH 1210)

Purpose
- To understand and appreciate how the early childhood mathematics curriculum fits together as a meaningful whole, rather than being a collection of disparate facts. (Knowing the curriculum)
- To distinguish between cognitive levels of learning in mathematics: skills, concepts, problem-solving. (Learning within the curriculum)
- To understand and use three representational levels – enactive, iconic, and symbolic – in delivering mathematical content. (Teaching the curriculum)

Course Objectives
1) Understand numbers and operations.
   a. Translate working with sets to numeracy and arithmetic.
   b. Use knowledge of base systems and place value to compute results, including multi-digit arithmetic.
   c. Interpret rational numbers and use rational numbers in computations.
   d. Solve problems involving whole numbers and rational numbers.

2) Understand measurement principles, procedures, and applications.
   a. Measure and estimate measurements in standard units.
   b. Analyze precision, accuracy, and rounding in measurements and computed quantities.
   c. Convert measurements within and between standard unit systems.
   d. Apply concepts of geometry to the measurement of objects, including angle measures.
   e. Solve problems involving measurement and estimation.

3) Understand geometry in two and three dimensions.
   a. Reason with shapes and their attributes.
   b. Classify figures based upon properties of lines, segments, and angles.
   c. Analyze figures in terms of symmetry, and tessellations of the plane.
   d. Compose and de-compose three-dimensional solids.
   e. Solve problems involving geometric figures.

4) Understand data and basic probability.
   a. Represent and interpret data, using a variety of displays.
   b. Summarize and describe distributions, including center, spread, and skew.
   c. Compute and compare experimental and theoretical probability for simple events.
   d. Solve problems involving data and basic probability.

Required Texts and/or Ancillary Materials
The textbook we will be using is *Mathematics for Elementary Teachers, A Contemporary Approach*, by Musser, Burger, and Peterson, 9th edition. It is also recommended that you have a scientific calculator.

Attendance and Participation Policy
You are expected to be present at all classes. If you have a conflict with any test, you must see me in advance. No make-up tests will be given for unexcused absences.

Assignments/Tests and expectations for out-of-class work
   1) **Labs** – Labs will be performed in class with a partner or small group. These will be designed to help you explore mathematical ideas using a problem solving approach and a variety of manipulative materials. At the end of each lab you will write a brief response about the lab which should include your insights as both a learner and an educator.
   2) **Presentation** – Each of you will select a topic/activity to present to the class. The topics will be chosen from journal articles for teaching children mathematics. The presentation should last about 10-15 minutes. You can choose to just lecture, however, handouts/worksheets are encouraged, as well as any other method of demonstrating the idea. Furthermore, you will prepare an evaluation paper of the article. This should include (1) a summary of the article, (2) your thoughts and feelings on this method (positive and/or negative).
   3) **Exams** – There will be 3 exams in addition to the final. Each of these will cover the material from class, homework, and any additional assigned readings.

Grading Breakdown:

	Labs (5)	20 pts. each
	Presentation	100 pts.
	Exams (3)	100 pts. each
	Final	100 pts.
	Total	600 pts.

Final Exam Date and Time
Tuesday, April 24 from 11am-1:45pm.

Academic Honesty

All academic work should be your own. Academic dishonesty (plagiarism and cheating) may result in automatic failure of the assignment or the course itself, and you will be referred to the Academic Affairs Office for suspension or expulsion proceedings. You are plagiarizing when you:

1. Copy material from a source without using quotation marks and proper citation.
2. Follow the movement of the source, substituting words and sentences but keeping its meaning, without citing it.
3. Lift phrases or terms from a source and embed them in your own prose without using quotation marks and proper citation.
4. Borrow ideas (that are not common knowledge) from a source without proper citation.
5. Turn in a paper wholly or partially written by someone else.

The complete statement on Plagiarism, Cheating and Dishonesty can be found in the *Campus Life Handbook*, page 33, at the following web link: http://www.otterbein.edu/public/CampusLife/HealthAndSafety/StudentConduct.aspx.

Learning Differences

If you have a documented learning difference please contact Kera McClain Manley, the Disability Services Coordinator, to arrange for whatever assistance you need. The Disability Services is located in Room #13 on the second floor of the Library in the Academic Support Center. You are welcome to consult with me privately to discuss your specific needs. For more information, contact Kera at kmanley@otterbein.edu, 614-823-1618 or visit the Disability Services at the following web link: http://www.otterbein.edu/public/Academics/AcademicAffairsDivision/AcademicSupportCenter/DisabilityServices.aspx.

Statement on Credit Hour Definition/Expectation for Student Work

For each credit hour of classroom or direct faculty instruction, students are expected to engage in two hours of out-of-class work (readings, homework, studying, project preparation, etc.). A four semester credit hour course requires eight hours per week of out-of-class work.

Tentative Schedule

Monday	Tuesday	Wednesday	Thursday	Friday
Jan. 8	**Jan. 9**	**Jan. 10**	**Jan. 11**	**Jan. 12**
	First day of class 2.1		2.1/2.2	
Jan. 15	**Jan. 16**	**Jan. 17**	**Jan. 18**	**Jan. 19**
	Last day to add 2.3		**Lab #1**	
Jan. 22	**Jan. 23**	**Jan. 24**	**Jan. 25**	**Jan. 26**
	3.1		3.2	
Jan. 29	**Jan. 30**	**Jan. 31**	**Feb. 1**	**Feb. 2**
	3.3		**Exam #1**	
Feb. 5	**Feb. 6**	**Feb. 7**	**Feb. 8**	**Feb. 9**
	4.2		4.3	*Last drop day w/o "W"*
Feb. 12	**Feb. 13**	**Feb. 14**	**Feb. 15**	**Feb. 16**
	Lab #2		6.1	
Feb. 19	**Feb. 20**	**Feb. 21**	**Feb. 22**	**Feb. 23**
	7.1		**Lab #3**	
Feb. 26	**Feb. 27**	**Feb. 28**	**Mar. 1**	**Mar. 2**
	8.1		**Exam #2**	
Mar. 5	**Mar. 6**	**Mar. 7**	**Mar. 8**	**Mar. 9**
	Spring Break!		**Spring Break!**	
Mar. 12	**Mar. 13**	**Mar. 14**	**Mar. 15**	**Mar. 16**
	12.1		12.2	
Mar. 19	**Mar. 20**	**Mar. 21**	**Mar. 22**	**Mar. 23**
Last day to drop	13.1		13.2	
Mar. 26	**Mar. 27**	**Mar. 28**	**Mar. 29**	**Mar. 30**
	Lab #4		10.1	
Apr. 2	**Apr. 3**	**Apr. 4**	**Apr. 5**	**Apr. 6**
	11.1		**Lab #5**	
Apr. 9	**Apr. 10**	**Apr. 11**	**Apr. 12**	**Apr. 13**
	Exam #3		**Presentations**	
Apr. 16	**Apr. 17**	**Apr. 18**	**Apr. 19**	**Apr. 20**
	Presentations		Review	
Apr. 23	**Apr. 24**	**Apr. 25**	**Apr. 26**	**Apr. 27**
	Final Exam **11am-1:45pm**			