I. **Course Description:**

This course introduces techniques, methods, materials, and evaluation of elementary and middle school mathematics programs. Candidates will have a basic understanding of the mathematical standards, including the National Council for Teachers of Mathematics standards and best practices for grades K-6 and their relationship to a quality math program and will demonstrate their understanding by using them appropriately in planning, teaching, reviewing, assessing, and modeling lesson plans with appropriate manipulatives at various grade levels for various reasons including exceptionalities. In the broadest sense, this course is designed to provide candidates with the ability to analyze situations in relationship to real life, and the use of technology as a tool to aid in the application/process of mathematical skills.

II. **Course Objectives:**

Students’ goals and outcomes for education courses should reflect the Teacher Education Program goals and performance expectations that are in the Teacher Education Handbook. Students in this course should stress **diversity, research, and evaluation** in all assignments.
a. **Relationship of this Course to Content Area Knowledge and Skills**

TN Standards: 1:1; 2:1, 2; 3:1,2,3; 4:1,2,3,4,5; 5:1,2,3,4; 7:1,2,3
NCTM Standards: 2,3,4,5,6

b. **Specific Course Objectives**

At the conclusion of the course, the students will be able to:

1. identify and apply problem-solving strategies and related manipulatives to real-life experiences (TNLS 1B, 4, 5A, 5B);
2. acquire knowledge of and ability to explain (as appropriate to grade levels) an overview of concepts of whole numbers, fractions, decimals, integers, measurements, ratio, technology, estimation, algebra, graphs, probability, statistics, geometry, and problem solving (TNLS 1B, 2A, 2B, 3A, 3B, 4A, 4B, 5A, 5B, 6A, 6B);
3. acquire knowledge of and the ability to explain the gather of, depicting of, and predicting data (TNLS 6B);
4. identify and remediate student error patterns in mathematics (TNLS 6B);
5. design and implement lessons using a variety of teaching strategies, including manipulatives, for mathematical concepts and operations and allowing for exceptionalities; identify and develop materials for introducing mathematical concepts using best practices (TNLS B1, B5)
6. integrate mathematical concepts across the curriculum (TNLS B1, B4)
7. acquire knowledge and use of standards in planning, developing, and evaluating mathematical programs (TNLS B)
8. demonstrate an understanding of effective instructional strategies that integrate mathematics content and processes (TNLS 1A);
9. use appropriate and accurate vocabulary and symbols of mathematics to express and justify mathematical concepts and strategies (TNLS B1, B3);
10. use a variety of manipulatives and other models to represent mathematical concepts, operations, and relations (TNLS B1, B5)
11. demonstrate both conceptual understanding of number operation sense and ability to apply those concepts and procedures in problem-solving situations (TNLS 2B);
12. analyze, represent, and describe change in a variety of contexts and problems using graphs, tables, and equations (TNLS B3, B4);
13. apply transformations and use symmetry to analyze mathematical situations (TNLS B3, B4);
14. demonstrate the ability to select and use symmetry to analyze mathematical situations (TNLS B3, B4);
15. select and use appropriate statistical methods to analyze data (TNLS B2, B6); and
16. understand the importance of the use of manipulatives in teaching mathematics (TNLS B1, B5).

c. **Summary List of Professional Dispositions**

1. Attendance and Punctuality
2. Initiative
3. Work Habits
4. Oral Communication
5. Written Communication Skills
6. Collegiality
7. Respect (in action and speech)
8. Commitment to Profession
9. Professionalism in Clinical & Field Placement (Ethics, Professional Growth, & Confidentiality)

d. **Unit Proficiencies (incorporated with the Unit’s Institutional Standards)**
Candidates at the initial and advanced programs throughout and upon completion of their plan of study will be able to:
1. articulate and demonstrate an understanding of the Dispositions of the Profession.
2. express the values of Active Engagement in Education and its value for improving the quality of life.
3. discuss and demonstrate the value of Social Skills.
4. demonstrate and apply the Content Knowledge, Skills, and Best Practices of the profession.
5. understand, articulate, and apply Pedagogical Skills.
6. demonstrate the ability to make informed decisions for improved practice through Reflection.
7. demonstrate growth and improvement in personal Social Intelligence.
8. demonstrate Analytical Skills.
9. demonstrate the ability to Synthesize Information to make informed decisions, from assessment data.
10. demonstrate the ability to Create a Positive Learning Environment.
11. understand, read, and conduct Qualitative and/or Qualitative Research.
12. demonstrate and implement Effective Communication Skills, both written and oral.
13. demonstrate Informational and Technology Literacy.
14. understand and implement Assessment and Evaluation.
15. articulate, implement, and demonstrate an Appreciation for Diversity, understand a Global Perspective and demonstrate an understanding that all students can learn.
16. understand and apply Legal Issues for Fairness and Social Justice.
17. appreciate the value for Lifelong Learning.

III. **Texts/Materials for the Course:**
All students are required to purchase the College Live Text computer program. There will be specified assignments required for submission to College Live Text. This may be purchased from the LMU bookstore.

a. **Required Textbooks for the Course**

*Saxon Manipulative Kit for K-3*. Lighthouse Educational Products.

b. **Suggested Textbook for the Course**
IV. Course Requirements, Assessment (Learning Outcomes) and Evaluation Methods:

a. Attendance Policy
   1. 2 tardies = 1 unexcused absence
   2. 2 unexcused absences = one letter grade cut
   3. You are expected, without exception, to contact your instructor prior to missing any session.

b. Course Expectations
   1. Attend all classes (arriving on time and staying until the end of class).
   2. If the student has obtained prior approval for absence, it is the student’s responsibility to make arrangements to complete the missing work. Any work missed must be completed by the next class session, or as directed by the teacher.
   3. Use text, handouts, and computer information to acquire knowledge for different mathematical purposes. Understand the importance of manipulatives in teaching mathematics.
   4. Read assigned readings and complete assignments.
   5. Demonstrate the ability to use a variety of manipulatives effectively to teach math concepts.
   6. Complete activities and tasks that are designed to teach math concepts and demonstrate knowledge of standards and dispositions.
   7. Acquire knowledge for creating a positive classroom environment.
   8. Demonstrate knowledge of a variety of assessment strategies for math.
   9. Demonstrate knowledge of problem solving in the classroom.
   10. Complete final examination/project.
   11. Use the computer in locating/teaching math concepts.
   12. Complete formal lesson plans and other assignments and submit via LiveText.
   13. Acquire a variety of tools for assessing mathematical understanding and mastery.
   14. Complete any other activities as presented/assigned by instructor.

c. Specific course structure/requirements
   1. Weekly content check quiz
      a. Weekly content check quizzes will be given based on the concepts, vocabulary, etc. from the topics of the course.
      b. In the event of an unexcused absence, these quizzes may not be made up at a later date.
   2. Lesson plans
      a. During the semester, you will be required to create and present two official lesson plans on a math concept topic covered AND based on TN Ready Standards.
      b. These lesson plans must be uploaded to LiveText, as assigned.
      c. Materials should be provided to the group for the activity, enough so that every member of the class can participate and have a model product.
      d. Presentation should be 20-30 minutes in length.
      e. The LMU’s Formal Lesson Plan format will be used.
f. Feedback will be given to the individual on this lesson plan and presentation based on the TEAM evaluation rubric.

3. Weekly, each student will provide a K-2 and 3-6 handout on the weekly assigned topic and upload to the appropriate assigned place on Blackboard. THESE HANDOUTS NEED TO BE MORE THAN JUST WORKSHEETS. GAMES AND/OR HANDS-ON ACTIVITIES ON EACH TOPIC ARE MORE APPROPRIATE FOR THIS ASSIGNMENT.
   a. Students will view all handouts posted each week by the class on Blackboard.
   b. Students will choose three K-2 handouts and three 3-6 handouts to print each week from Blackboard.
   c. These handouts need to be organized in the math activities box for the final project, as described below.

4. Develop a math notebook (see description)
   a. You should create and maintain a math notebook for this class.
   b. This must be in a 3-ring notebook with tabs/labels for different sections.
   c. In this notebook, you should include all student and instructor handouts.
   d. This math notebook needs to be organized in the math activities box for the final project, as described below.

5. Develop a math activities box.
   a. Everything you do in class needs to be included in a math activities box.
   b. All 6 (three K-2 and three 3-6) handouts for each topic should be printed and kept in this math box.
   c. This can be in a regular file box, a plastic box, etc.
   d. The box must be organized and neat and should provide a head-start for you as you begin your teaching.
   e. Organization, completeness, neatness, and explanation are required for this box.
   f. This math activities box will be graded as a final project for this class.

6. Tutoring
   a. Students must tutor one K-6 student in math for a minimum of 4-1 hour sessions.
   b. Students will keep a time sheet with parent/guardian signature of each tutoring session.
   c. Students will write a 2-3 page reflection describing the tutoring experience.

7. Article Critique

8. Other activities/assignments may be required, at the discretion of the instructor.

d. Assessment and Evaluation
   Grading is based on:
   Written work and quizzes 25%  
   (ex. reflections, weekly quizzes, handouts, etc.)
   Projects, demonstrations, & displays 40%  
   (ex. lesson plans and math center activities )
   Participation 15%

Revised 5/29/2015
Final exam/project 20%

<table>
<thead>
<tr>
<th>Grade Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100%</td>
<td>A</td>
</tr>
<tr>
<td>80-89%</td>
<td>B</td>
</tr>
<tr>
<td>70-79%</td>
<td>C</td>
</tr>
<tr>
<td>60-69%</td>
<td>D</td>
</tr>
<tr>
<td>Below 60%</td>
<td>F</td>
</tr>
</tbody>
</table>

V. Methods of Instruction:
- Collaboration
- Cooperative Learning
- Demonstration
- Projects
- Performance Tasks
- Lecture
- Project-oriented Demonstrations
- Accumulation of Manipulative Math Tools

VI. Information Literacy/Technological Resources:
- A number of manipulative math tools are to be constructed and collected for use in the authentic classroom.
- Live Text and/or Blackboard assignments are expected to be completed in this class.
- The use of computers, computer programs, or other technology/databases in teaching math is expected to be a regular exercise.
- Candidates will use a variety of technologies in lesson presentations, including the use of calculators.
- All students are required to access LMU e-mail accounts and check e-mail daily.

VII. University Policies:

Students With Disabilities Policy: As a rule, all students must read and comply with standards of the LMU Student Handbook and LMU catalogue. Any student seeking assistance in accordance with the Americans Disabilities Act (1990 as amended) should contact the ADA Coordinator, Dan Graves, with regard to required documentation and in order to make appropriate arrangements. Contact information: dan.graves@lmunet.edu and/or 423.869.6267 (800-325-0900 ext. 6267).

Counseling: LMU counselors are available to help current students with personal, career and academic concerns that affect academic success and quality of life. The Director of Counseling, Jason Kishpaugh, can be contacted at jason.kishpaugh@lmunet.edu and/or 423.869.6401 (800-325-0900 ext. 6401).
Discrimination, Scholastic Dishonesty, Cheating, and Plagiarism Policies can be found in the student handbook: LMU’s website:  http://www.lmunet.edu/campuslife/handbooks.shtml.

Course Evaluations: In addition to meeting degree requirements specified in the graduate and undergraduate catalogs, all students are required to complete University-administered course evaluations.

Outcomes Assessment Testing: Degree requirements include participating in all outcomes assessment testing (e.g., general education assessment, major field tests, etc.) and activities when requested. Students may be required to complete one or more questionnaires and to take one or more standardized tests to determine general educational achievement as a prerequisite to graduation (see appropriate catalog for additional information).

All Associate of Science – Nursing; Associate of Science – Veterinary Health Science; and Associate of Science – Veterinary Medical Technology students must take the General Education Proficiency Profile examination.

LMU’s Inclement Weather Policy can be found at the following link to LMU’s website:  http://www.lmunet.edu/curstudents/weather.shtml. Students should check their LMU email during delays/closures to receive information from individual faculty regarding potential assignments and/or other course information.

IIX. mission statements:

Lincoln Memorial University Mission Statement can be found at the following link to LMU’s website:  http://www.lmunet.edu/about/mission.shtml.

CARTER AND MOYER SCHOOL OF EDUCATION STATEMENT
The Carter and Moyers School of Education is dedicated to preparing professional educators of distinction who embody the three core ideals of Lincoln Memorial University. We accomplish our mission through instilling the core ideals of Values, Education, and Service in candidates who:

- demonstrate the dispositions of the education profession – Values
- articulate and live the knowledge base and understandings of moral, social, and political dimensions which will impact individual students, schools, districts, and communities for the enrichment of society – Values
- demonstrate the teaching skills and learning strategies acquired through rigorous academic studies and active engagement in real life classroom experiences while involved in field and internship placements in partner P-12 schools – Education
- promote lifelong learning through continued professional development and scholarship – Education
- assist in meeting the educational needs of an ever-increasing global society, especially the underserved – Service
articulate an understanding that all students can learn as well as demonstrate the disposition to serve and teach diverse student populations – Service

IX. Course Outline/Assignment/units of Instruction or Clinic Schedule:
Instructor will provide specific directions about assignments as the semester proceeds. Growth in all areas is expected. Instruction, assignments, and grading are at the discretion of the instructor.

X. Important Dates in the Academic Calendar Spring 2016:

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Final Registration before classes begin</td>
<td>January 8</td>
</tr>
<tr>
<td>Classes begin (Regular term)*</td>
<td>January 11</td>
</tr>
<tr>
<td>Martin Luther King Jr. Day (special activities)</td>
<td>January 18</td>
</tr>
<tr>
<td>Last day to complete registration/add classes</td>
<td>January 20</td>
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<tr>
<td>Last day to drop course without “WD”</td>
<td>February 9</td>
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<tr>
<td>Lincoln Day/Founders Day (special activities)</td>
<td>February 12</td>
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<tr>
<td>Convocation (9:30 a.m. in session classes &amp; resident students)</td>
<td>February 17</td>
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<tr>
<td>Mid-term</td>
<td>February 29-March 4</td>
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<tr>
<td>Last day to drop course without “F”</td>
<td>March 19</td>
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<tr>
<td>Early Registration Begins</td>
<td>April 4</td>
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<tr>
<td>Residence halls close (5 p.m.)</td>
<td>March 18</td>
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<tr>
<td>Spring break (no classes)</td>
<td>March 21-25</td>
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<tr>
<td>Good Friday (no classes)</td>
<td>March 25</td>
</tr>
<tr>
<td>Residence halls open (1 p.m.)</td>
<td>March 27</td>
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<tr>
<td>Classes end</td>
<td>April 29</td>
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<tr>
<td>Final exams</td>
<td>May 2-6</td>
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<tr>
<td>Commencement (11 a.m.)</td>
<td>May 7</td>
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<tr>
<td>Residence halls close (2 p.m.)</td>
<td>May 7</td>
</tr>
</tbody>
</table>

XI. Student community Engagement: A cornerstone of the University’s mission is service to humanity. As part of the University’s Student Service Initiative, students receiving any form of institutional aid participate in at least 10 hours of service learning per semester. Students are encouraged to network with one another in classroom settings and with instructors and advisors for searching out and creating appropriate service learning projects related to their field of study. For more information visit: http://www.lmunet.edu/campuslife/initiative/index.shtml or contact the Associate Dean of Students.

XII. THE INSTRUCTOR RESERVES THE RIGHT TO REVISE, ALTER AND/OR
AMEND THIS SYLLABUS, AS NECESSARY. STUDENTS WILL BE NOTIFIED IN WRITING AND/OR BY EMAIL OF ANY SUCH REVISIONS, ALTERATIONS AND/OR AMENDMENTS.