LOYOLA UNIVERSITY CHICAGO

*Preparing people to lead extraordinary lives*

**School of Education/ECSE Program**
***Teaching, Learning, and Leading with Schools and Communities***

# Syllabus

## TLSC 360: Designing and Implementing Relevant Assessment and Instruction: Instructional Methods in Integrated Early Childhood Mathematics

Fall Semester 2017

3 hours

**Instructor Information**

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Office hours: By appointment on Wednesdays or Fridays

**Module Information**

Dates: August 30 - December 6, 2017 (note that LOCUS dates are incorrect)
Wednesday Seminar Times: 4:15 – 6:45
On-Campus Location: Mundelein 204
School-Site Location: various

**Sequence/Module Description**

During this rigorous module, candidates continue to learn while also applying their accumulated knowledge and skills. The experiences in this sequence are designed to allow candidates to measure their growth in the areas of planning, instruction, and assessment while reflecting on what teacher candidates should know and be able to do prior to student teaching and prior to certification. TLSC 360 focuses on developmentally appropriate mathematics instructional and assessment methods for early childhood and early childhood special education teachers. Developing meaningful curricular content, modifications, hands-on learning experiences, and integration of early childhood content area standards are all addressed in this course, which covers pre-K through grade 3. Sessions are held on campus in conjunction with a half-day field placement each week.

This sequence addresses TLLSC Enduring Understandings 1, 2, 3, 4, 6, 7, and 9.

**TLSC 360 Module Goals**

Essential Questions:

- How does my knowledge and understanding of my students impact my assessment development and implementation?
- How do my curriculum and instruction choices impact the classroom environment?
- How does my use of data support student success?
- How does my formal and on-going reflection on the impact on my students' learning aid in my development as a professional educator?

As a part of this module, candidates will understand that effective educators:

- Enact principles of social justice in the school and community by focusing on the intellectual, social and emotional development of all students, promoting human rights, reducing inequalities, and increasing the empow-

erment of society's most vulnerable groups. Promote empowerment of individuals through engagement of social justice and a multidimensional understanding of students and their development.

- Engage in collaborative relationships with fellow teachers, school personnel, administrators, students, families and communities and promote collaboration among students to ensure the academic success, and social and emotional well--being of all students. Engage and promote varied collaborative relationships to ensure a broad range of success for students.

- Hold high expectations and build on the assets of diverse students (including, but not limited to race, ethnicity, culture, language, SES, immigration status, exceptionality, ability, sexual orientation, gender, and gender identity).

- Create and support safe and healthy learning environments for all students.

As a part of this module, candidates will:

- Incorporate research and evidence--based practices into the design of instruction (e.g. UbD, IB, SIOP and UDL). (5S; 9A) (IB)
- Design a standards--based instructional unit that uses backward design (e.g. UbD) to align objectives with assessments and instructional practices based on high expectations for each student's learning and behavior. (3H; 3I) (IB)
- Select relevant instructional content, materials, resources and strategies for differentiated and universally designed instruction. (3Q; 5O) (IB)
- Use assessment strategies and devices that are nondiscriminatory, and take into consideration the impact of disabilities, methods of communication, cultural background, and primary language when measuring knowledge and performance of students. (7R) (IB)
- Use data to differentiate assessments to meet the needs of diverse learners. (1H; 3J; 5P) (IB)
- Analyze and use student information to design instruction that meets the diverse needs of students and leads to ongoing growth and achievement (1H) (IB)
- Use data to plan for differentiated instruction to allow for variations in individual learning needs (3J) (IB)
- Use assessment data, student work samples, and observations from continuous monitoring of student progress to plan and evaluate effective content area reading, writing, and oral communication instruction (6H)

***Early Childhood Instructional Strategies***

- Compare and contrast constructivist and traditional teaching methods in early childhood math and science instruction.
- Employ methods of differentiated instruction for math and science in the early childhood setting.
- Demonstrate developmentally effective questioning strategies.
- Use appropriate multimedia to support early childhood math and science instruction.
- Identify early childhood classroom management considerations in math and science instruction.

***Early Childhood Classroom Activities for Math and Science***

- Identify procedures for conducting a math or science classroom activity in an early childhood setting.
- Locate appropriate resources for early childhood math and science activities.
- Modify an early childhood math or science lesson to meet the needs of diverse learners.

***Early Childhood Learning Environments***

- Identify early childhood commercial math and science programs.
- Analyze the design/layout of an early childhood setting for math and for science instruction.
- Review state and school site policies on health and safety in math and science early childhood environments.

- Identify essential materials and useful resources for teaching math and science in the early childhood setting.
- Explore various types and applications of early childhood math manipulatives.

***Technology in Early Childhood Math and Science Education***

- Identify various types of software and hardware available for early childhood math and science education.
- Discuss developmentally effective uses of technology in early childhood math and science education.
- Examine appropriate methods of using the Internet to create meaningful learning experiences in early childhood math and science education.
- Use developmentally appropriate multimedia to support early childhood math and science education.
- Compare and contrast state technology standards with those of the International Society for Technology in Education (ISTE).
- Identify the critical skills children need to effectively use technology in early childhood math and science education.

***Parent and Community Partnerships in Early Childhood Math and Science Education***

- Develop an effective, comprehensive communication plan for families.
- Explore opportunities for family participation in early childhood math and science curriculum.
- Design early childhood math and science extension activities for the home environment.

***History of Math and Science in Early Childhood Education***

- Examine significant events in the evolution of early childhood math and science education.
- Explore theories of early childhood math and science education.
- Examine the effects of early childhood education on the position and policies of the National Council of Teachers of Mathematics (NCTM) and National Science Teachers Association (NSTA).
- Analyze the effects of teachers' perceptions of math and of science on teaching and on learning in the early childhood environment.

***The Teaching and Learning of Math in Early Childhood***

- Explore early childhood math concepts.
- Differentiate between conceptual understanding and procedural knowledge in the teaching and learning of math in early childhood.
- Identify developmentally effective methods of mathematics instruction.
- Examine literature sources that support mathematical understandings for the young child.
- Use problem solving strategies to teach computation skills.
- Identify developmentally effective assessment strategies that demonstrate mathematical development.

**Alignment with Illinois Standards for Early Childhood Educators**

The competent early childhood teacher demonstrates proficiency in the use of mathematics; understands and communicates the major concepts, procedures, and reasoning processes of mathematics, which include number systems, number sense, geometry, measurement, statistics, probability and algebra; and promotes the abilities of children from birth to grade 3 as they apply, interpret and construct mathematical thinking skills in a variety of situations.

**Knowledge Indicators**

The competent early childhood teacher:

1) understands problem-solving approaches that children may use to investigate and understand mathematical content;
2) understands various approaches (estimation, mental math, manipulative modeling, pattern recognition and technology) that can be used to explore and communicate mathematical ideas, solve problems and investigate everyday situations;
3) understands concepts, skills and procedures related to number, number sense, computation and numeration;
4) understands concepts, skills and procedures related to geometry and spatial relationships;

5) understands concepts, skills and procedures related to measurement of attributes such as length, weight, volume and temperature;
6) understands concepts, skills and procedures needed to collect and analyze data;
7) understands concepts, skills and procedures related to exploring concepts of chance; and
8) understands and uses patterns and relationships to analyze mathematical situations.

**Performance Indicators**

1) provides opportunities for students to apply problem-solving strategies in order to investigate and understand mathematical content;
2) uses various approaches (estimation, mental math, manipulative modeling, pattern recognition and technology) to assist students as they explore and communicate mathematical ideas, solve problems and investigate everyday situations;
3) provides opportunities for children to learn and apply number, number sense, computation and numeration in everyday situations;
4) provides opportunities for children to learn and apply geometry and spatial relationships in everyday situations;
5) provides opportunities for children to learn and apply measurements, such as length, weight, volume and temperature, in everyday situations;
6) provides opportunities for children to learn and apply procedures needed to collect and analyze data in everyday situations as they use graphing and estimation;
7) provides opportunities for children to learn and apply concepts of chance in everyday situations; and
8) provides opportunities for children to learn and apply patterns and relationships in their analysis of everyday situations.

**Foundational Mathematical Knowledge**

1) Mathematical Proficiency

The effective early childhood teacher:

A) understands conceptually the mathematical content taught during preschool to grade 2 as well as the content taught in grades 3 to 8; can explain and apply mathematical concepts and procedures; and can make connections to everyday mathematical applications or real-world analogies necessary to translate formal mathematical content into meaningful instruction that children can understand and learn;
B) understands the mathematical procedures taught during the early childhood years and just beyond, including the skills to link procedural knowledge to conceptual understanding so each step in a procedure can be explained or a procedure can be readily adapted to solve a novel problem; and
C) possesses affective capacities, including a productive disposition with positive beliefs about mathematics (e.g., nearly everyone is capable of understanding at an elementary level) and the confidence to tackle challenging problems and teach mathematics.

2) Children's Mathematical Development

The effective early childhood teacher:

A) understands how children develop mathematical proficiency from birth to age 8 and what conditions foster or impede this development;
B) understands how informal mathematical knowledge based on everyday experiences develops and provides a basis for understanding and learning formal mathematics (i.e., school-taught and largely symbolic) during the early childhood years and beyond; and
C) understands the developmental progressions of key early childhood concepts and skills.

**Pedagogical Knowledge**

1) Best Practices

The effective early childhood teacher:

A) understands the importance of using a variety of teaching techniques (including regular instruction that specifically targets mathematics, integrated instruction, and unstructured and structured play) and how to systematically and intentionally engage children with developmentally appropriate and worthwhile mathematical activities, materials and ideas; take advantage of spontaneous learning moments; structure the classroom environment to elicit self-directed mathematical engagement; and choose and use games to serve as the basis for intentional, spontaneous or self-directed learning;
B) understands the importance of using instructional activities and materials or manipulatives thoughtfully and how these are used to transmit key concepts and skills;
C) understands the importance of focusing on the learning of both skills and concepts that is meaningful;
D) understands the importance of engaging children in the processes of mathematical inquiry (problem-solving, reasoning, conjecturing and communicating/justifying or "talking math") and how to do so effectively;
E) understands the importance of fostering a positive disposition and how to do so effectively (e.g., encouraging children to do as much for themselves as possible), including how to prevent or remedy math anxiety; and
F) understands the importance of using assessment on an ongoing basis in planning and evaluating instruction, targeting student

needs and evaluating student progress.

2) Psychological Development

The effective early childhood teacher:

A) understands the importance of building on what children already know, so that instruction is meaningful (e.g., how to relate or connect formal terms and procedures to children's informal knowledge);

B) understands the importance of using developmental progressions effectively in assessing developmental readiness (e.g., identifying whether developmental prerequisites for an instructional goal have been acquired), planning developmentally appropriate instruction and determining the next instruction, step or a remedial plan;

C) understands the importance of the limitations of children's informal knowledge and how developmentally inappropriate instruction can cause misconceptions or other learning difficulties, as well as how to address common learning pitfalls; and

D) understands the importance of the progression in children's thinking from concrete (relatively specific and context-bound) to abstract (relatively general and context free), including the need to help children "mathematize" situations (going beyond appearances to consider underlying commonalities or patterns).

**Standards**

1) Counting and Cardinality:

The effective early childhood teacher:

A) understands that subitizing (i.e., immediately and reliably recognizing the total number of items in small collections of items and labeling the total with an appropriate number word) is the basis for a learning trajectory of verbal-based number, counting and arithmetic concepts and skills;

B) understands the requirements, components and principles of meaningful object counting (i.e., stable order principle, one-for-one principle, cardinality principle and abstraction principle);

C) understands key, more advanced verbal and object counting skills on the learning trajectory for counting and cardinality and knows how these skills are logically and developmentally related;

D) understands how children's ability to make verbal-based magnitude comparisons develops, including the mathematical ideas this entails;

E) understands why written numbers (numerals) are valuable tools (e.g., can serve as a memory aid; make written calculations with large numbers easier or even possible) and how to promote the meaningful learning of numeral reading and writing to 10; and

F) understands the role of estimation (e.g., useful when exact answers are not possible or an approximate answer is sufficient) and why children resist estimating answers (e.g., fear of being wrong, obsession with the correct answer as reinforced by the guess-and-check).

2) Operations and Algebraic Thinking

The effective early childhood teacher:

A) understands the specific addition and subtraction concepts and skills children need to learn in early childhood;

B) understands the formal meaning of relational symbols and how these symbols are or can be interpreted by children; and

C) understands the specific multiplication and division concepts and skills children need to learn in early childhood.

3) Numbers and Operations in Base Ten

The effective early childhood teacher:

A) understands, can identify and can apply the fundamental concepts of grouping and place-value that underlie the Hindu-Arabic numeral system and operations with multi-digit numbers;

B) understands the application of place value, the properties of operations, and the relation between addition and subtraction to adding and subtracting multi-digit numbers up to 1,000, including demonstrating and explaining renaming (carrying and borrowing) algorithms with base-ten blocks; and

C) understands the application of place value and properties of operations to multiply one-digit whole numbers and multiples of 10 up to 90 (e.g., 9 x 80), including demonstrating and explaining how the meaning of multiplication can be demonstrated with base-ten blocks.

4) Numbers and Operations: Fractions

The effective early childhood teacher:

A) understands, and can explain, two common meanings of fraction notation in terms of the conceptual basis for fractions (equal partitioning) using the informal analogy of "fair" sharing;

B) understands, and can justify, equivalent fractions in terms of the informal analogy of "fair" sharing; and
C) understands, and can justify, fraction comparisons in terms of the informal analogy of "fair" sharing.

5) Measurement and Data

The effective early childhood teacher:

A) understands the general principles of measurement (e.g., object attributes, direct and indirect comparisons, unit value);
B) explicitly understands purposes of and procedures for measurements (e.g., length, time, currency, volume) commonly used in everyday life, including how to derive formulas for area and perimeter; and
C) understands the role of data, data analysis and data representations (e.g., graphs, tables) in solving problems, raising or addressing issues or questions (e.g., scientific, social, economic or political), and informing others about the importance of involving participants in collecting and analyzing their own data.

6) Geometry

The effective early childhood teacher:

A) understands the van Hiele developmental levels of geometric thinking and demonstrates achievement of at least Level 2 (i.e., Level 0, visual; Level 1, analysis; Level 2, informal reasoning or abstraction; Level 3, deduction; and Level 4, rigor);
B) understands how the "big ideas" of composition and decomposition and equal partitioning apply to geometry and the developmental trajectory children follow in becoming competent composers and decomposers;
C) understands basic geometric concepts, such as angle, parallel and perpendicular, and can describe these ideas in terms of an informal analogy (e.g., an angle is the "amount of turn");
D) understands and can summarize and illustrate the cognitive developmental progression from visual to descriptive to analytic to abstract characterizations of shapes; uses this progression to understand children's thinking;
E) understands the importance of precision in describing and reasoning about spatial locations and relationships, including descriptive power of prepositions (and their imprecise mapping among languages and dialects) and mathematically precise tools, such as measurements, grids and the coordinate plane;
F) understands that spatial relationships can be manipulated mentally and that point of view affects both experiences and representations of spatial relationships; and
G) describes the connections (relationships) between geometric properties and arithmetic and algebraic properties, and adapts a problem in one domain to be solved in the other domain.

**LiveText and IDEA Objectives**

This course requires the use of LiveText to submit work. Make sure that your LiveText login and password are accessible; you received these during freshman year in TLLSC and have used them every semester since. You will also be required to proceed to the IDEA Campus Labs website to complete evaluations for TLSC 360. You may log in at http://luc.edu/idea/
This course is designed to address the following IDEA objectives:

- Gaining factual knowledge (methods)
- Learning to apply course materials
- Developing specific skills, competencies, and points of view needed by professionals in the field

**Conceptual Framework**

"*Social Action through Education*" is the conceptual framework infused into all programs within the School of Education. The underlying beliefs or principles that form the foundation of this framework include sensitivity and concern for others as essential societal values, and also the belief that caring for others will enhance the moral core of our communities and via a ripple effect, our society and the world as well. A desire to help others is an admirable first step, but collaborating cross-culturally to make a lasting impact beyond the level of the individual involves a more specialized set of competencies, some of which will be emphasized in this course. Improving the quality and effectiveness of early childhood mathematics education is a focus of this module. The following Conceptual Framework Standards are specifically addressed in this TLSC 360, with primary standards addressed in the module shaded:

| **CF Standards** | **Activities in TLSC 360** |
|---|---|
| CFS1: Candidates critically evaluate current bodies of knowledge in their field. | - Class lectures and readings addressing the state of the field in relation to mathematics methods |
| CFS2: Candidates apply culturally responsive practices that engage diverse communities. | - Planned and implemented mathematics instruction in classrooms serving diverse children. |

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| CFS3: Candidates demonstrate knowledge of ethics and social justice. | |
| CFS4: Candidates engage with local and/or global communities in ethical and socially just practices. | - Fieldwork opportunities in partner schools |

**Required Course Texts**

- Van de Walle, J. (2014/2017). *Teaching Student-Centered Mathematics: Developmentally Appropriate Instruction for Grades Pre-K-2 (Second or Third Ed.)*, Pearson. *Second edition is loaded on provided Kindles. You may purchase third edition if you desire.*
- Diller, D. (2011). *Math Work Stations: Independent Learning You Can Count On, K-2*. Stenhouse Publishers, Portland, ME. *This text will be provided to SEED grant scholars.*

**Additional required materials**

- LiveText certificate and log in (provided during Sequence 1 – you have used this every sequence and will continue through Sequence 8. For further information, proceed to: LiveText
- Math manipulatives kit – these can be checked out from Dr. Kennedy and must be returned to him in Lewis Towers (NOT in the ECSE PLC) at the end of the course. If kits are not returned, you will be charged $275.00 to replace your kit.

**Supplemental texts**

- Hall, T.E., Meyer, A., & Rose, D. (2012). *Universal design for learning in the classroom: Practical applications*. NY: Guilford Press
- Wiggins, G. & McTighe, J. (2004). *Understanding by design* professional development workbook: Alexandria, VA: Association for Supervision and Curriculum Development.

**Attendance**

In order to receive all attendance points for TLSC 360, make sure to do the following:

a) Arrive promptly and maintain excellent attendance records. Candidates are expected to attend every session for the scheduled duration as to maintain consistency for students and school professionals. Ask your professor and classroom teacher(s) how they wish to be contacted regarding any special circumstances. Make arrangements and notify everyone involved before a scheduled absence.
b) Inform your professor and classroom teacher(s) ahead of time – by phone message or email if possible if you must be absent. If there is an emergency, contact your professor as soon as reasonably possible afterward. After missing a day of the module, it is necessary to contact your professor.
c) Assignments are due on the dates listed on course syllabi unless permission to hand them in late is given. Be sure to follow the policies of your specific professor of each module as it relates to policies on assignments.

**Module Assignments**

***Course Participation and Professionalism (Dispositions Assessment) 15% of final grade***

Sequence 7 marks the transition from a primary focus on university support and preparation on campus/in schools to a focus on field--based teaching with modules designed to provide secondary support. Expectations for professionalism move beyond consistent and active participation in all class activities and discussions and completing all assigned texts and articles. These are now basic expectations for all candidates. The evaluation of your professionalism in Sequences 7 and 8 are now linked to the TLLSC program dispositions. Each TLLSC module focuses on one or more professional dispositions. In order to receive full points for the area of Participa-

tion/Professionalism, you must earn Target ratings in *Professionalism, Inquiry* and *Social Justice*. The descriptions for the expected behaviors for the disposition(s) can be found on the rubric posted in LiveText for this course. The dispositions associated with Sequence 7 are:

*Professionalism*

- **D2** Ground advocacy efforts in ethical convictions that promote social justice and affect policy design and implementation.
- **D8** demonstrating high levels of personal engagement and investment in all students' learning while remaining persistent in seeking strategies for reaching students who are not initially successful.
- **D17** Demonstrate a high level of professionalism through personal responsibility and accountability related to attendance, participation and communication.

*Inquiry*

- **D6** Collect and analyze community, school, family, and student data to guide educational decision making.

*Social Justice*

- **D1** Develop awareness that teaching is a complex practice with inherently political and ethical implications.
- **D3** Value diversity and advocate for all students, particularly those from populations that are historically disenfranchised, underserved and/or overrepresented (including, but not limited to race, ethnicity, culture, language, SES, immigration status, exceptionality, ability, sexual orientation, gender, gender identity).
- **D7** Value the unique identities and backgrounds of all students, families and communities as essential assets in learning environments.

- ***Math Autobiography : A Personal Experience Essay: 5% of final grade***
  Before we ever decide to become teachers, we all have a long history in the field of education. Our experiences, be they good or bad, have helped to shape our perceptions of ourselves as learners first, then as potential educators. Each experience has also shaped our views about the subjects we've learned, and our abilities to teach those subjects. This can be especially true of math, science, and technology. When it comes to these subjects, there are many personal, academic, and cultural contexts that have influenced how we perceive our abilities. Some of these contexts we are very aware of, others we may think about rarely or not at all, but all have influenced us as students and will affect how we teach. For this reflection, you will think about and examine your personal experiences in math. Consider not only your academic experiences, but also your more informal exposure to these subjects at home and in your everyday life. Think and write about these experiences over time, from childhood to the present. What people and events encouraged you? Which experiences challenged you productively, and which made you just want to give up? Try to be as specific and as honest as you can as you explore how your experiences in these areas have affected your current view of yourself as either "good" or "bad" or "other" at math.

- ***Math Lesson Plans and Classroom Activities 25% of final grade***
  Candidates will develop five math activities using the course lesson plan format. Lesson plans will be given feedback by the instructor with the opportunity to reflect and revise. One lesson plan must be a math game; another lesson plan must be based on a children's book. In addition, candidates will lead at least three of these activities in their field site. Your video recorded activities must fit the needs and curriculum of your classroom placement, so there is no guarantee that lessons you plan for the integrated instructional unit assignment can be imported into those classrooms. You are responsible for arranging for these activities, consent, scheduling, content, etc. Activities may include whole group or small group instruction. Upload videos to a Box folder – use a subfolder within your Sequence 7 video folders, and title it TLSC 360 videos, sharing with your instructor and Dr. Kennedy. Videos may be viewed in class as well.

- ***Math Clinical Interviews: 15% of final grade***
  Candidates will interview one child at their field site to develop their skills for observing and interpreting what children do and say as evidence of their developing mathematical understanding. Candidates will select developmentally-appropriate and nondiscriminatory assessment tasks that align with grade-level expectations. Candidates will document the child's responses and write an analysis of what the data mean in terms of the child's

learning trajectories and implications for instruction and differentiation.

- ***Reflections on course readings and other assigned topics: 5% of final grade***
  The seminar instructor will provide two opportunities for candidates to write one-page reflections on specific readings that are tied to current topics of early math education. These in-class written reflections will incorporate the candidates' experiences and observations in their field placement, and also provide a means to reflect upon their own intellectual and professional growth in relation to teaching and learning in urban communities.

- ***Integrated instructional unit: 30% of final grade***
  For this assessment candidates create a unit that is focused on three main areas: assessment, differentiation for students with special needs, and the integration of multiple areas of instructional content, with a primary focus on mathematics. The unit is planned throughout the semester with a focus on the national and state content area standards and the use of multiple assessments to document student learning, as well as a strong emphasis on differentiation and modifications for students with special needs. The candidates use Understanding by Design (UbD) to form the basis of this unit and use a lesson plan format from the school districts in which they will student teach. ECSE candidates should build upon the work they completed in Sequence 6 wherever possible, since this is an *integrated* unit that must address multiple content areas.

  The unit for this project is approximately one week in length, and should be appropriate for the children in grades K, 1, or 2. This project is one of the ECSE program core assessments of your progress as early childhood educators. It is designed to show evidence of your mastery of planning for the early elementary grades. Therefore, *this unit may not be directly appropriate for the students with whom you will work*. Your completed unit will form one portion of your grade, while your planning/delivery/assessment/reflection of some adapted portion of the unit will comprise the other portion. The candidates turn in each stage of their unit in class and receive peer and faculty feedback. Candidates will also teach this unit (or a portion of it) in their Sequence 7 site after reflection and revisions have been made during the class presentation session.

- ***Summative Assessment for Sequence 7: 10% of final grade***
  - **Documentation of TPSC 360 field placement hours:** Candidates will provide documentation that they have visited their placement classroom for a MINIMUM of twelve half-days. The dates and times of these visits will be arranged between the candidate and the mentor teacher, and must not overlap with any Sequence 7 ECSE placement days. Document these visits on your TLSC 360 Attendance form and submit to your instructor.
  - **Documentation of Completion of edTPA Context for Learning and Task One draft:** Evidence of completion of the Context for Learning and draft of Task One will be submitted to LiveText. Your TLSC 360 instructor does not evaluate these components, but your scores on the Sequence 7 Summative Assessment do count toward your course grade.

## Course Grading

### Grading Policy & Scale:

The final grade is based upon the completion of all course requirements.

**A =** 92-100% **A- =** 90-91% **B =** 84-89% **B- =** 80-83% **C =** 76-79% **C-** = 70-75% **D** = 60-69 **F** = below 60

| Assignment | Submitted to: | Points |
|---|---|---|
| Dispositions Assessment (Participation and Professionalism) | LiveText | 15 |
| Math Autobiography | Sakai | 5 |
| Math Lesson Plans and Classroom Activities | Sakai<br>Videos submitted to Box | 20 |

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| Math Clinical Interviews | Sakai<br>Assessment tasks should be submitted to instructor in advance of interviews | 15 |
| In-class written Reflections | Sakai | 5 |
| Integrated Unit | Sakai with any additional artifacts submitted to your instructor as requested | 30 |
| S7 Summative Assessment | See instructions in TLSC 370 | 10 |

## Module Seminar Schedule

| Week | Focus | Reading or Assignment | Assignment Due |
|---|---|---|---|
| #1<br>August 30 | Introduction<br>Seminar and Syllabus Overview<br>***What is Math?***<br>**Trends in Early Math Education** | Draft Math Autobiography personal essay<br>Joint NCTM/NAEYC position statement, and Math CCSS practice standards will be distributed in class | |
| #2<br>September 6 | **Sets and Sorting**<br>Constructivism<br>**Concrete-Pictorial-Symbolic Trajectory**<br>Teaching through Problem Solving | Teaching Student--Centered Math by Van de Walle<br>----Chapters 1 and 2<br>Article: *The research-based balance in early childhood mathematics: A response to Common Core criticisms*, Clements, Fuson, & Sarama | Math Autobiography Personal Essay Due |
| #3<br>September 13 | **Assessing for Learning**<br>**Number Sense**<br>Routines | Teaching Student--Centered Math by Van de Walle<br>----Chapters 3 and 8<br>Article: *Calendar time for young children: Good intentions gone awry*, Beneke, Ostrosky, & Katz | |
| #4<br>September 20 | **Differentiating Instruction**<br>**Developing Meanings for the Operations**<br>Problem structures | Teaching Student--Centered Math by Van de Walle<br>----Chapters 4 and 9<br>In-class written reflection #1 | Clinicial Interview assessment tasks due for instructor approval |
| #5<br>September 27 | **Integrating content areas**<br>Finding resources to support integrated planning and teaching (e.g., online, books, etc.)<br>Using stations in the classroom----hands on practice | Math Stations by Diller<br>----Chapters1,2and3 | Lesson Plan due: Activity based on a children's book |
| #6<br>October 4 | **Fluency**<br>Games | Teaching Student--Centered Math by Van de Walle<br>----Chapter 10<br>Article: *Why children have difficulties mastering the basic number combinations and how to help them*, Baroody<br>Math Stations by Diller<br>-—Chapter 4 (skim) | Lesson Plan due: Math game activity plan |

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| #7<br>October 11 | **Place-Vale Concepts**<br>**Children's Computation Strategies**<br>Algorithm<br>Task Analysis | Teaching Student--Centered Math by Van de Walle----<br>Chapters 11 and 12<br><br>Math Stations by Diller<br>-—Chapters 5 and 6 (skim) | Draft of Instructional Unit due: Stage 1 |
| #8<br>October 18 | **Promoting Algebraic Thinking**<br><br>Models and representational tools<br><br>Building Home/School Connections | Teaching Student--Centered Math by Van de Walle----<br>Chapter 7 and 13<br><br>Return and Discuss Stage 1 draft of Instructional Unit<br><br>In--class written reflection #2 | |
| #9<br>October 25 | **Planning, Teaching, and Assessing Diverse Learners**<br>Dual language learners<br><br>Access and equity | Teaching Student--Centered Math by Van de Walle----<br>Chapters 5 and 6 | Clinicial interview data collection due |
| #10<br>November 1 | **Fractional Thinking**<br><br>Fractions as Numbers<br>Using the number line to order and find equivalence | Teaching Student--Centered Math by Van de Walle----<br>Chapter 14<br><br>Article: *13 Rules That Expire*, Karp, Bush, & Dougherty<br><br>Peer/instructor review, discussion, feedback on Stage 2 Instructional units | Draft of Instructional Unit due: Stage 2 |
| #11<br>November 8 | **Measurement**<br>Concepts<br>Connections to Number and Shape | Teaching Student--Centered Math by Van de Walle----<br>Chapter 15<br><br>Math Stations by Diller—-Chapter 8 | Clinical Interview Analysis Due |
| #12<br>November 15 | **Developing Geometric Reasoning and Spatial Thinking**<br><br>Stages of Block Play | Teaching Student--Centered Math by Van de Walle----<br>Chapter 16<br><br>Math Stations by Diller—-Chapter 7 | |

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| #13<br>November 22 | NO CLASS – Thanksgiving break begins | | |
| #14<br>November 29 | **Data Analysis** | Teaching Student--Centered Math by Van de Walle---- Chapter 17<br>Peer/instructor review, discussion, feedback on Stage 3 Instructional units | Draft of Instructional Unit due: Stage 3 |
| #15<br>December 6 | **Putting It All Together**<br>TRU Dimensions for Mathematically Powerful Classrooms | Article: *The TRU Math conversation guide: A tool for teacher learning and growth*. Baldinger, E. M., Louie, N., & the Algebra Teaching Study and Mathematics Assessment Project. (2014)<br>Article: *Why Do We Teach?* Schoenfeld | Final Instructional Unit Due |

## School of Education Policies and Information

**Diversity**

This module calls on candidates to meet the needs of diverse learners, and make diversity the substance of the content that they will teach. The unit that they develop with the mentor teacher educator and their peers will be transdisciplinary or interdisciplinary and therefore will incorporate a diversity of content. In this way, this module offers an opportunity to apply the candidates' understanding of diversity on multiple levels.

**Technology**

Teacher candidates are expected to use technology in the preparation of their work for this module, but are also expected to incorporate it into their lessons that they prepare for students when appropriate. All students, except those who are non-degree, must have access to LiveText to complete the benchmark assessments aligned to the Conceptual Framework Standards and all other accreditation, school-wide and/or program-wide related assessments. You can access more information on LiveText here: LiveText.

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## Loyola University Chicago
## School of Education
## Syllabus Addendum

**IDEA Course Evaluation Link for Students**

Each course you take in the School of Education is evaluated through the IDEA Campus Labs system. We ask that when you receive an email alerting you that the evaluation is available that you promptly complete it. To learn more about IDEA or to access the website directly to complete your course evaluation go to: http://luc.edu/idea/ and click on ***STUDENT IDEA LOGIN*** on the left hand side of the page.

**Dispositions**

All students are assessed on one or more dispositional areas of growth across our programs: ***Professionalism, Inquiry, and Social Justice.*** The instructor in your course will identify the dispositions assessed in this course and you can find the rubrics related to these dispositions in LiveText. *For those students in non-degree programs, the rubric for dispositions may*

*be available through Sakai, TaskStream or another platform.* Disposition data is reviewed by program faculty on a regular basis. This allows faculty to work with students to develop throughout their program and address any issues as they arise.

**LiveText**

All students, *except those who are non-degree*, must have access to LiveText to complete the benchmark assessments aligned to the Conceptual Framework Standards and all other accreditation, school-wide and/or program-wide related assessments. You can access more information on LiveText here: LiveText.

## Syllabus Addendum Link

- www.luc.edu/education/syllabus-addendum/

This link directs students to statements on essential policies regarding *academic honesty*, *accessibility*, *ethics line reporting* and *electronic communication policies and guidelines*. We ask that you read each policy carefully.

This link will also bring you to the full text of our conceptual framework that guides the work of the School of Education – ***Social Action through Education.***