

SYLLABUS: Math 147/CIEP 104

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Office Hours: Monday and Wednesday: 10:30-3:30

Course Description: This course provides the fundamental knowledge base for teaching elementary school mathematics. Candidates study the underlying principles of mathematics appropriate for grades pre-k-9. Candidates use Common Core Standards and Principles and Standards for School Mathematics from the National Council of Teachers of Mathematics (NCTM).

Course Rationale and Relationship to the Teacher Education Program: To prepare teachers who can deliver high-quality mathematics education, the Loyola teacher preparation program provides a strong knowledge base, positive attitude, and a wide range of instructional strategies.

Conceptual Framework and Conceptual Framework Standards

The School of Education's *Conceptual Framework—Social action through education*—is exemplified within the context of this course. It is the goal of this course to help you become excellent math teachers. Since algebra is the key to higher education, the foundation work that you do in mathematics will assist all students to achieve their highest potential.

STANDARDS

SOE Conceptual Framework Standards (CFS)

- CFS1: Candidates critically evaluate current bodies of knowledge in their field.
- CFS2: Candidates apply culturally responsive practices that engage diverse communities.
- CFS3: Candidates demonstrate knowledge of ethics and social justice.
- CFS4: Candidates engage with local and/or global communities in ethical and socially just practices.

Smart Evaluation

1. Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)
2. Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course
3. Learning to apply knowledge and skills to benefit others or serve the public good

DIVERSITY

Issues of diversity (socio-economic, ethnic, exceptionalities, and gender) are addressed through instructional methodology, assessment and technology. Teacher candidates study mathematics contributions made by a wide array of mathematicians. Candidates teach five lessons to a small group of children at Swift School, one of the most diverse schools in Chicago. Course readings exemplify the international nature of mathematics.

METHOD OF ASSESSMENT

Candidates are expected to put in a minimum of 1.5x class time in additional outside study.

A wide variety of evaluation strategies are used. Math problems, math notebook, participation, integrative activities, lesson plans, instructional materials, quizzes, a final exam, teaching small groups of elementary school children and computer activities contribute to the final grade.

35%: Assignments and Participation

Candidates are expected to participate in each class. All assignments (except for math problems from the Jacobs text) should be **typed**. All assignments are due for the next class period. Candidates submit assignments in a 2-pocket folder.

No late assignments will be accepted.

5% Lesson Plans and Instructional Materials (5 @ 1% each)

You will prepare and teach five lessons to a small group of children in 4th grade at Swift School as the service learning component of this class.

Because this course is part of your professional program, **the quality of your work is important**. The rubric for grading assignments and lesson plans is:

Standard	Points
I would show this to my principal.	1.0
I would show this to my colleagues.	0.9
I would show this to my students.	0.8
This is just for me.	0.7
I was not able to complete the whole assignment.	0.6-0.1
No assignment.	0

30% Quiz 6 @ 5% (No make-up quizzes will be provided. There will be a 7th quiz during the last class. Candidates who miss a quiz must take Quiz 7. Candidates who would like to improve their grade by substituting the Quiz 7 grade for their lowest grade may take Quiz 7.

25% Final Exam

5%: NCTM Standards Notebook (All assignments and class activities will be organized into a binder using the NCTM Standards and assessed at the final exam.)

NCTM Standards Notebook Rubric

Criteria	%
Introduction	1
Neatness	1
5 NCTM tabs	1
Interesting cover	1
100% % of assignments	1

Extra Credit: Candidates will be able to earn up to 5% extra credit for the course through opportunities that will become available during the semester.

Some of the opportunities include volunteering at schools; attending workshops/lectures on campus; developing children's books to support math content, etc.

Grade Assignments: Minimum %

A	94%
A-	90%
B+	87%
B	84%
B-	80%
C+	77%
C	74%
C-	70%
D+	67%
D	60%
F	0%

Livertext Dispositions

Professionalism

- Candidate embraces personal responsibility and agency by excelling in proactive problem resolution and conflict management.
- Candidate takes initiative in the development of self and others and actively fosters collaborative relationships that are mutually beneficial.
- Candidate exemplifies ethical practices, guidelines and professional standards of his/her profession, including but not limited to: arriving to class prepared and on time; submitting assigned work on time; reflecting the expectations of the assignment in submissions.
- Candidates participates in all classes
- Candidates prepare high quality instructional materials
- Candidates arrive at clinical site ready to teach

Inquiry

- Candidate demonstrates the ability to generate their own knowledge by carrying out discipline-recognize, systematic approaches to gathering and using multiple forms of data to inform instruction and promote learning for all. Identifies adaptations for students by name in lesson plan

Social Justice

- Candidates consistently welcome and affirm diversity at all levels and demonstrate respect and understanding of differences across groups in their academic and/or field-based work.
- In their written, spoken, and collaborative course contributions, candidates continuously examine and challenge their own beliefs about equity and social justice.
- Candidates clearly and actively model their commitment to taking action to promote multiple perspectives, to seek justice and prevent injustice, and to advocate for the marginalized in schools and society.

Textbooks

-Mathematics: a Human Endeavor: a Book for Those Who Think They Don't Like the Subject, **Third Edition** Harold Jacobs, 3rd Edition 0-1767-2426-x

*-Mathematicians Are People, **Too Volume I: Stories from the Lives of Great Mathematicians*** Luetta Reimer, Wilbert Reimer

-Riddle Math: Using Student-Written Riddles to Build Mathematical Power, Carl Sherrill, electronic version

-The Number Devil: A Mathematical Adventure, Hans Ensenberger ISBN 0-8050-6299-8

-More Stories to Solve: Fifteen Folktales from Around the World by George Shannon (Author) , Peter Sis (Illustrator)

COURSE OUTLINE

Week	Essential Math Ideas
1	Multiplication is Everywhere
2	Patterns: The Heart of Mathematics
3	Algebra is for Everyone
4	Math Works
5	Mathematics is Multi-cultural
6	Mathematical Inventions
7	Teach Probability and Fractions Together
8	Geometry:
9	Topology may be in your Future
10	Measurement
11	Measurement: Data
12	Problem Solving
13	Math and the Arts

Loyola University Chicago

School of Education

Syllabus Addendum

Smart Evaluation

Towards the end of the course, students will receive an email from the Office of Institutional Effectiveness reminding them to provide feedback on the course. They will receive consistent reminders throughout the period when the evaluation is open, and the reminders will stop once they have completed the evaluation.

- The evaluation is completely anonymous. When the results are released, instructors and departments will not be able to tell which student provided the individual feedback.
- Because it is anonymous and the results are not released to faculty or departments until after grades have been submitted, the feedback will not impact a student's grade.

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/

Center for Student Access and Assistance (CSAA)

Should you encounter an unexpected crisis during the semester (e.g., securing food or housing, addressing mental health concerns, managing a financial crisis, and/or dealing with a family emergency, etc.), I strongly encourage you to contact the Office of the Dean of Students by submitting a CARE Referral for yourself or a peer in need of support: www.LUC.edu/csaa. If you are uncomfortable doing so on your own, please know that I can submit a referral on your behalf.

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***.