

## SYLLABUS: Math 147/CIEP 104

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**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: 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.

### IDEA Objectives

1. Learning fundamental principles, generalizations, or theories
2. Learning to apply course material (to improve thinking, problem solving, and decisions)
3. Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course

### 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 journal, 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. Candidates keep a daily math journal and submit it for review before each quiz. All assignments (except for math problems from the Jacobs text) should be **typed**. All assignments are due for the next class period. Candidates hand in 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 4<sup>th</sup> or 5<sup>th</sup> 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:

<b>Standard</b>	<b>Points</b>
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 7<sup>th</sup> 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**

<b>Criteria</b>	<b>%</b>
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 Dispostions**

**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*, 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,  
<http://morningriverpubs.com/W-RiddleMath.htm>

*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

<u>Week</u>	<u>Essential Math Ideas</u>
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

### 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/](http://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**.