SYLLABUS

CIEP 390: Field Study in Education: Algebra Boot Camp (ABC)

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Course Description: This course provides an opportunity to work with a small group of 8th graders from underserved Chicago public schools to improve their math achievement.

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: www.luc.edu/education/mission/ 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 to apply course material (to improve thinking, problem solving, and decisions)
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

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, Fairness, and the Belief that All Students Can Learn.*** 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. 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 Dispostions	
Professionalism	
	• Participates in all classes • Prepares high quality instructional materials • Arrives at clinical site ready to teach
All students can learn	
	• Identifies adaptations for students by name in lesson plan
Fairness	
	• Gives all students an equal chance to participate in lesson

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.

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.

TECHNOLOGY

Teacher candidates learn how to integrate productivity tools on the computer into mathematics instruction. They learn how to use spreadsheets to solve problems and improve student understanding of algebra. Teacher candidates view videotapes of students responding to high quality instruction. Candidates are expected to use the internet to find and use excellent mathematical sites such as http://www.forum.swarthmore.edu/ ; to research historical information about mathematics topics; http://www.history.mcs.st and http://www.ac.uk/~history/ ;and to make connections with mathematics and other topics such as art at http://library.thinkquest.org/16661/, the tessellations of M. Escher.

METHOD OF ASSESSMENT

Grade Assignments

A = Participates in 90% of professional development and math coaching

B = Participates in 80% of professional development and math coaching

C = Participates in 70% of professional development and math coaching

D = Participates in 60% of professional development and math coaching

F = Participates in less than 60% of professional development and math coaching

Course Outline

Professional Development: September 179:00-3:00
Professional Development: 8:00-10:00 prior to each session

Date	10:00-10:30 Greeting, Critical Thinking Challenge	10:30-11:00 Math Concept Question	11:00-11:30 Problem Solving with the Math Concept Question	11:30-12:00 Math Olympics and Graphing	12:00-12:30 Math, Theater and Vocabulary of the Day	12:30-1:00 Mastering Multiplication, Fractions and Math Games
9/24	Magic Trick *Build It* Vocabulary of the day or academic language	Pre test Algebra Name tags **How is n^1, n^2 and n^3 different from 1n, 2n and 3n?**	Happy Numbers 2n, n^2 puzzle	Trashketball	*Hey Benjamin Banneker, Come Play with Us* Scene I	-Times table chart -Square Speed match -7 Ate 9
10/1	Stick Figures	**What is a square root?**	Pythagorean theorem	New variables	*Hey Benjamin Banneker, Come Play with Us!* Scene II	-Multiples of 9 and prime factorization *-Prime Factorization Speed Match* *-Pythagorean Theorem Rummy*
10/15	*Bean Riddles*	**What is the difference between a variable and a constant?**	Translating English to algebra	Pulse rate and increasing seconds of jumping jacks	*Hey Benjamin Banneker, Come Play with Us!* Scene III	- Multiples of 10^n *-Algebra Expressions Speed* Match
10/22	*Coin Riddles*	**What are the rules for computing with integers?**	Finding temperature range	New variables	*Journey to the Other Side* Chapter I	-Using the distributive property to make multiplication easier (11 and 12) *-4 in a Row*
10/29	*Guess My Spinner* *Make the Spinner*	**What do fractions and probability have in common?**	Complementary events Successive events	Right hand peanut grab	*Journey to the Other Side* Chapter II	-100 names for 1 and Subtracting a fraction from a whole number -Multiplying and dividing proper fractions
11/5	*Words Worth Riddles*	**How can a math detective use proportions or the "rule of three" to find x?**	Choosing a healthy fast food meal	New variables	*Journey to the Other Side* Chapter III	-Adding and subtracting fractions level 1, 2 and 3 -Fractions, decimals and % match
11/12	*Pattern Block Riddles*	**What is the difference between 2n, n^2 and 2^n?**	Growing patterns	Paper straw javelin	*Journey to the Other Side* Chapter IV	-Multiples of 2, 4 and 8 *-The Power of Tu*
11/19	*Postage Stamp Riddles*	**Does this formula describe a pattern? (testing formulas)**	Pick's Formula	New variables	*Journey to the Other Side* Chapter V	-Multiples of 5 and 10 *-Closest to Zero* *-Go for Zero* *-Highest Sum*
12/3	*Bean Riddles*	**Math detective: How do I find x?**	Solving equations	Cotton Ball Shot Put	*Journey to the Other Side* Chapter VI	-Multiples of 3, 6 and 12 *-Vary Variables*
12/10	*Stick Figures*	**Artist: How do I draw a picture of this function?** **Is y = mx +b: a short-cut?**	Graphing equations using a table	New variables	*Journey to the Other Side* Chapter VII	-Multiplying and dividing mixed numbers *-Graph the Path* (use a number cube: even numbers =slope of ½; 5 = stay, 1 = slope of 1 and 3 = slope of 3

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.***