

**The Polk Brothers Mathematics Program
The University of Chicago**

**Free Math Classes for Teachers
Summer 2015**

All courses are free for CPS teachers. The cost for all other people is \$500.00 per course.

**Math 53011 - Methods of Teaching
Middle School Mathematics**

Dr. Jerry Becker

6 2/3 graduate semester hours (200 units)

57 class Hours = 57 CPDU's

June 29 – July 30, 2015

Monday – Thursday, 9:00 – 12:00 a.m.

Hyde Park Campus, room to be announced

COURSE DESCRIPTION: This class provides teachers with an effective, modern method of Mathematics Education, known as the Open-Ended Approach. This method works by introducing a series of problems that seem extremely elementary, but that model very central mathematical themes, and are designed to have a number of different methods of solution. The students are asked to solve the problems in as many different ways as they can. This method is very attractive to students because it gets them into a creative, energetic mode of attacking the mathematics, rather than memorizing mechanical formulae and procedures dictated by the teacher. Students are surprised to see their friends come up with completely different (but equally valid) ways of solving the problems, and experience has shown that teachers and students alike greatly enjoy this process. The Open-Ended Approach can be used in any Mathematics class, K-12.

**MATH 53014 - Math Content for Elementary
and Middle School Teachers: Algebra**

Dr. Robert Fefferman

Graduate Course, Math 53014

5 Graduate Semester Hours (150 units)

45 Class Hours = 45 CPDU's

June 29 – July 23, 2015

Monday – Thursday, 1:30 - 4:30

Hyde Park Campus, room to be announced

Course Description: The goal is to help teachers deepen their understanding of mathematical ideas underlying the mathematics curriculum in elementary and middle grades. We are particularly concerned with continuity from arithmetic to algebra and the interdependence between the two areas in mathematics. We will explore the ways in which algebraic arguments and theorems depend on basic ideas in arithmetic and the

ways, in turn, in which arithmetic is dependent on algebraic ideas. For example, we will use basic assumptions in arithmetic to give algebraic proofs of important theorems, such as The Fundamental Theorem of Arithmetic.

We shall begin by playing a game designed to teach various themes concerning the counting numbers, for example, the study of prime numbers. We shall also explain, for instance, why a given counting number is a multiple of 9 exactly when the sum of its digits is a multiple of 9, and how to figure out what day of the week you were born on (without asking your mother!) Other topics include the study of linear and quadratic equations, a simple derivation of the quadratic formula, and a number of other interesting topics from Algebra.

**Math 53016: Number Theory for
Middle School Teachers**

Dr. Robert Fefferman

3 1/3 Graduate Semester Hours (100 units)

32 Class Hours = 32 CPDU's

July 27 – July 30, 2015

Monday - Thursday, 1:30-4:30 p.m. plus 10
sessions between September 2015 and June 2016
(Mondays, 4:45 – 7:00 p.m.)

Hyde Park Campus, room to be announced

COURSE DESCRIPTION: This course will begin during the fifth week of the program. Although it will continue some of the themes from the Algebra course, people who have not taken the Algebra course will also be comfortable with the material. We will continue working with prime numbers and will use modular number systems to explore some basic ideas in arithmetic and algebra.

**POLK BROTHERS PROGRAM - UNIVERSITY OF CHICAGO
TEACHER APPLICATION AND REGISTRATION FORM - SUMMER 2015**

Please check the course(s) you wish to take.

_____ **MATH 53011: Polk Brothers Methods of Teaching Middle School
Mathematics – Jerry Becker (June 29 – July 30, 2015,
M-Th, 9:00-12:00 a.m.**

_____ **MATH 53014: Polk Brothers – Math Content for Elementary and
Middle School Teachers: Algebra – Bob Fefferman (June 29 – July 23,
2015, M-Th, 1:30-4:30 p.m.**

_____ **MATH 53016: Number Theory for Middle School Teachers – Polk
Brothers - Bob Fefferman (July 27-July 30, 2015, M-Th, 1:30-4:30 p.m.,
and 10 evening dates from Sept, 2015 – June 2016, to be determined)**

PLEASE PRINT OR TYPE – ANSWER ALL QUESTIONS COMPLETELY.

Name: _____ **Gender:** _____ **Date of Birth:** _____

U of C ID# if you have one: _____

Is this your first Polk Brothers Class? yes _____ no _____

Soc. Sec. #: _____ **Country of Citizenship:** _____

Place of Birth: City: _____ State/Province: _____ Country: _____

Home Address: _____

Street

City

State

Zip

Home Phone: _____ **Cell Phone:** _____

Email Address you want us to use: _____

School Name: _____ **CPS email** _____

Grade(s) you are now teaching (Specify if Spec. Ed.): _____

Email this form Marie Schilling (mschilling17@earthlink.net) (the preferred way) or mail it to: Marie Schilling; 5600 S. Blackstone Avenue; Chicago, Illinois 60637.
The deadline for applications is Friday, June 16, 2015.