UCLA Department of Mathematics
Math Content Program for Teachers
www.math.ucla.edu/mcpt

Dear Educator:

The UCLA Math Content Program for Teachers (MCPT) is proud to offer courses designed to increase your content knowledge and confidence in mathematics. MCPT is the only comprehensive program approved by the California Commission on Teacher Credentialing for a middle school authorization to teach mathematics. By completing the twelve-course program, you will satisfy the requirements for a Subject Matter Authorization to teach mathematics through grade 9 (or Geometry).

Now is a great time to enroll. Through a generous donation from the Center for Mathematics and Teaching, the cost of an MCPT course for the year 2009-2010 will be reduced from $800 to $390. This fee includes tuition and all necessary instructional materials. There are also various grants and scholarships available through the California Mathematics Council (CMC). Please visit http://www.cmc-math.org/SouthGrantApp for more information and application deadlines.

Please take note of these four changes in course logistics:

(1) Prerequisites for some courses have changed, so please review the Course Descriptions on the following page.

(2) If you have taken other college-level mathematics courses or currently teach middle/high school mathematics, you may be eligible to waive prerequisites by participating in a one-day orientation.

(3) Due to budget limitations, MCPT no longer provides dinner, so please bring your own food to class.

(4) Since dinner is no longer provided, class breaks will be shortened, and weekly sessions will now generally meet from 4:15 p.m. to 7:45 p.m.

Thank you for your continued support of MCPT, and we look forward to seeing you in class.

Sincerely,

Shelley Kriegler, Director
kriegler@ucla.edu
310-794-6588

COURSE DESCRIPTIONS

Math X462A – NUMBER POWER 1 (4 units)**:** This course focuses primarily on whole-number concepts and operations, including sense-making strategies for single-digit and multidigit addition, subtraction, multiplication, and division. Other topics include various number systems (Babylonian, Egyptian, Mayan) and base-5 arithmetic, which are used to help diagnose difficulties children face as they learn our Hindu-Arabic number system. The course follows a problem-solving approach, in which participants learn to express solutions to problems in multiple ways: visually, algebraically, numerically, and verbally (the fourfold way). Prerequisite: Intermediate Algebra

Math X462B – NUMBER POWER 2 (4 units)**:** This course focuses primarily on fraction concepts and operations. Area, set, and linear models are used to explore equivalence, ordering, and procedures for the basic arithmetic operations on fractions. Other topics include the decimal expansions of fractions and some basic probability concepts. The course follows a problem-solving approach, in which participants learn to express solutions to problems in multiple ways: visually, algebraically, numerically, and verbally (the fourfold way). Prerequisite: Intermediate Algebra

Math X468A – PERSPECTIVES ON ALGEBRA (4 units)**:** This course examines ideas associated with algebraic thinking and algebra. Topics include functions, variables, graphs, equations, linear equations, and systems of linear equations. Emphasis is placed on the interpretation of graphs. The course follows a problem-solving approach, in which participants learn to express the solution to a problem in multiple ways: visually, algebraically, numerically, and verbally (the fourfold way). Prerequisite: Intermediate Algebra (A one-day orientation is recommended for participants new to the program)

Math X468B – TOPICS IN ALGEBRA AND GEOMETRY (formerly Perspectives on Algebra-Part 2) (4 units)**:** This course focuses on several topics that cut across algebra and geometry. Emphasis is placed on using models to gain insight into concepts and using the graphing calculator as a problem-solving tool. Topics include the function concept, linear and quadratic functions and relations, systems of equations, Pythagorean theorem, the distance formula, and right-triangle trigonometry. Prerequisite: Math X468A OR program director's consent plus a one-day orientation

Math X467 – PERSPECTIVES ON GEOMETRY (4 units)**:** This course examines ideas associated with two- and three-dimensional geometric figures, including polygons, polyhedra, circles, cylinders, and spheres. Topics include the vocabulary of geometric figures; spatial visualization, representation by nets and isometric drawings; basic notions and constructions of Euclidean geometry; isometric transformations, congruence, and similarity; length, area, and volume; and perimeter and surface area. Prerequisite: Intermediate Algebra (A one-day orientation is recommended for participants new to the program)

Math X464A – PERSPECTIVES ON FUNCTIONS 1 (4 units)**:** This course examines the families of linear, quadratic, power, polynomial, exponential, and trigonometric functions. Emphasis is placed on studying functions as bridges between the mathematics and the situations they model. Graphing calculator skills are reinforced and expanded. Prerequisite: Math X468B OR program director's consent plus a one-day orientation

Math X464B – PERSPECTIVES ON FUNCTIONS 2 (4 units)**:** This course examines the families of polynomial, exponential, inverse, logarithmic, rational, and periodic functions. Emphasis is placed on studying functions as bridges between the mathematics and the situations they model. Graphing calculator skills are reinforced and expanded. Prerequisite: Math X464A

Math X465 – DEALING WITH DATA (4 units)**:** This course focuses on the gathering, description, and analysis of data. Each lesson is developed around questions generated from published or collected data sets, and a recurring theme of the course is to "let the data tell a story." Techniques for one-variable and bivariate data analysis are included. Participants also explore randomness and sampling through probability experiments and data collection. Basic concepts of probability, such as techniques for determining the sample space, independence, and mathematical expectation, are included. Prerequisites: Math X462B and X468A, OR program director's consent (A one-day orientation is recommended for participants new to the program)

Math X461 – MORE (ADVANCED) TOPICS IN DATA (4 units)**:** This course will review descriptive data techniques and focus on statistical inference. Participants will apply techniques to analyze data and prepare a project that illustrates sound statistical reasoning. Access to a computer and the internet is required. A laptop computer is recommended. Prerequisites: Math X465 and Math X464A

Math X469 – MORE (ADVANCED) TOPICS IN ALGEBRA (formerly Advanced Topics in Mathematics) (4 units)**:** Participants will study topics in high school mathematics from a mature perspective. Topics include algebraic structures, vectors, complex numbers, and trigonometry. Connections to classroom practice will be included. Prerequisite: Math X464B

Math X470 – MORE (ADVANCED) TOPICS IN GEOMETRY (4 units)**:** Participants will study topics in high school mathematics from a mature perspective. Topics include Euclidean and non-Euclidean geometries, coordinate geometry, conic sections, proof. Connections to classroom practice will be included. Prerequisites: Math X467 and Math X464A

Math X472 – MATH AND TECHNOLOGY (4 units)**:** Participants use computers and graphing calculators to explore math concepts and develop technology skills for teaching. Projects will require the use of software such as MS Word, MS Excel, Geometry Sketchpad and MathType. A computer (preferable a laptop) with Microsoft Office is required. Prerequisite: Math X468B

TENTATIVE WINTER 2010 SCHEDULE OF CLASSES

NEW: If you have taken other college-level mathematics courses or currently teach middle/high school mathematics, you may be eligible to waive prerequisites by attending a one-day orientation. Contact Shelley Kriegler (kriegler@ucla.edu) for consent.

Section	Address	Location	Course	Day	Start Date	Instructor
NP1-VN	Van Nuys Middle School 5435 Vesper Ave Sherman Oaks, CA 91411	Near Burbank Blvd and Kester Ave	Number Power 1	Wed	1/6	Hirsch
NP2-EW	East Whittier Middle School 14421 E Whittier Blvd Whittier, CA 90605	Near Whittier Blvd and Catalina Ave	Number Power 2	Wed	1/6	Canham
GEO-MO	Schurr High School 820 N Wilcox Ave Montebello, CA 90640	Near I-60 and Garfield Ave	Perspectives on Geometry	Mon	1/11	Canham
DWD-LL	Lakeside Middle School 11000 E Kenney St Norwalk, CA 90650	Near Pioneer Blvd and I-5	Dealing with Data*	Wed	1/6	Galima
MTD-LL	Lakeside Middle School 11000 E Kenney St Norwalk, CA 90650	Near Pioneer Blvd and I-5	More Topics in Data*	Wed	1/6	Baughman/ Swanson
MTG-MC	Maclay Middle School 12540 Pierce St Pacoima, CA 91331	Near Glenoaks Blvd and Pierce St	More Topics in Geometry	Thu	1/7	Swanson
MCPT-UC	UCLA Mathematical Sciences 520 Portola Plaza Los Angeles, CA 90095	Near Hilgard Ave and Westholme Ave	One-Day MCPT Orientation	Sat	1/9	Kriegler

TENTATIVE SPRING 2010 SCHEDULE OF CLASSES

Section	Address	Location	Course	Day	Start Date	Instructor
ALG-EW	East Whittier Middle School 14421 E Whittier Blvd Whittier, CA 90605	Near Whittier Blvd and Catalina Ave	Perspectives on Algebra	Wed	4/7	Canham
TAG-LL	Lakeside Middle School 11000 E Kenney St Norwalk, CA 90650	Near Pioneer Blvd and I-5	Topics in Algebra and Geometry*	Wed	4/7	Swanson
FN1-MO	Schurr High School 820 N Wilcox Ave Montebello, CA 90640	Near I-60 and Garfield Ave	Perspectives on Functions 1	Mon	4/5	Galima
FN2-LL	Lakeside Middle School 11000 E Kenney St Norwalk, CA 90650	Near Pioneer Blvd and I-5	Perspectives on Functions 2*	Wed	4/7	Blankenhorn
MTD-MC	Maclay Middle School 12540 Pierce St Pacoima, CA 91331	Near Glenoaks Blvd and Pierce St	More Topics in Data	Thu	4/8	Mojica
MCPT-UC	UCLA Mathematical Sciences 520 Portola Plaza Los Angeles, CA 90095	Near Hilgard Ave and Westholme Ave	One-Day MCPT Orientation	Sat	4/10	Kriegler

* Enrollment priority will be given to teachers employed in the school district hosting the class.

Class locations and dates are subject to change. Please check our website (www.math.ucla.edu/mcpt) for the most up-to-date information.

HOW TO REGISTER FOR MCPT CLASSES

1. By Mail
   Mail the registration form below to:
   UCLA Department of Mathematics
   Math Content Program for Teachers
   520 Portola Plaza
   Los Angeles, CA 90095-1555

2. By Fax
   Fax the registration form to 310-267-4451. No cover page necessary.

3. By Phone
   Call Jo Packham at 310-794-6588 to register.

4. By Email
   Email the information requested below to Jo Packham at jopackham@math.ucla.edu.

REGISTRATION FORM

Please bring your payment (check or cash for $390) to the first session. Participants will complete comprehensive course enrollment forms on the first day of class.

Please print neatly

Name_____

Address_____

City _____ ZIP _____

Phone (Home)_____ Phone (Work) _____

(Local) District_____ E-Mail _____

School _____ Grade(s) currently teaching_____

_____ Location _____

Winter 2010

Please enroll me in _____

Section # _____ Location _____