



**UCLA Department of Mathematics  
Math Content Program for Teachers**

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. MCPT is currently subsidized with a donation from the Center for Mathematics and Teaching, Inc., making it possible to reduce course fees from \$800 to \$350. 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) Due to budget limitations, MCPT is no longer able to provide dinner, so please bring your own food to class.
- (3) 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](mailto:kriegler@ucla.edu)

# COURSE DESCRIPTIONS

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**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

**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 X462A, X462B, or X468A

**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: Math X468A

**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

**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 X 464A

**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. Prerequisite: Math X462A, X462B, or X468A

**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, Math X 468B

**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. Prerequisite: Math X467, 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

## SPRING 2009 SCHEDULE OF CLASSES

Section	Address	Location	Course	Day	Start Date	Instructor
ALG-MO	Montebello USD District Office, Room 16 123 S Montebello Blvd Montebello, CA 90640	Near Montebello Blvd and Whittier Blvd	Perspectives on Algebra	Mon	3/30	Chan
ALG-LL	Lakeside Middle School Room 604 11000 E Kenney St Norwalk, CA 90650	Near Pioneer Blvd and I-5	Perspectives on Algebra*	Tue	3/31	Galima
TAG-LL	Lakeside Middle School Room 504 11000 E Kenney St Norwalk, CA 90650	Near Pioneer Blvd and I-5	Topics in Algebra and Geometry*	Tue	3/31	Canham
DWD-SV	LAUSD Local District 2 PD Center 10715 Strathern St Sun Valley, CA 91352	Near Vineland Ave and Strathern St	Dealing with Data	Thu	4/2	Mojica
FN1-SV	LAUSD Local District 2 PD Center 10715 Strathern St Sun Valley, CA 91352	Near Vineland Ave and Strathern St	Perspectives on Functions 1	Thu	4/2	Swanson
MAT-LL	Lakeside Middle School Room 505 11000 E Kenney St Norwalk, CA 90650	Near Pioneer Blvd and I-5	Math and Technology*	Tue	3/31	C. Lee Packham
MTA-LN	Lennox Middle School Room 411 11033 Buford Ave Lennox, CA 90304	Near I-405 and I-105	More Topics in Algebra	Mon	3/30	Blankenhorn

\* 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](http://www.math.ucla.edu/mcpt)) for the most up-to-date information.*

# REGISTRATION FORM

Please bring your payment (check or cash for \$350) to the first session. Participants will complete comprehensive course enrollment forms on the first day of class.

Name _____	
Address _____	
City _____	ZIP _____
Phone (Home) _____	Phone (Work) _____
(Local) District _____	E-Mail _____
School _____	Grade(s) currently teaching _____
_____	Location _____
<b>Spring 2009</b>	
Please enroll me in _____	
Section # _____	Location _____

MAIL registration form to:

Shelley Kriegler  
UCLA Department of Mathematics  
Los Angeles, CA 90095-1555

Or FAX registration form to:

Shelley Kriegler 310-267-4451

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Valley Village, CA 91607

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