

**Department of Mathematics  
University of California  
MATH X472 – MATH AND TECHNOLOGY**

Instructor: \_\_\_\_\_ Location: \_\_\_\_\_

Dates: \_\_\_\_\_ Time: \_\_\_\_\_

Phone \_\_\_\_\_ E-Mail: \_\_\_\_\_

**Course Description:**

Participants will learn to use commonly available technology tools and applications to improve the quality and efficiency of their professional work and increase student understanding of important mathematical concepts. Some of the applications planned for exploration include creating professional documents using POWERPOINT, MATHTYPE, and graphics from MSWORD, exploring algebraic relationships with EXCEL, exploring geometric relationships with GEOMETER SKETCHPAD, and analysis of rates of motion using a the TI calculator-based ranger. A laptop computer is recommended. Prerequisite: Perspectives on Functions 1.

**Required Materials:**

Participants must have available for homework: computer with MSWORD, EXCEL, PowerPoint, Internet access, e-mail, Graphing Calculator (TI84)

**Course Requirements/Assessments:**

Journal/Email Assignments	10%
Tech Autobiography, Mass Introduction Email, 2 presentation feedbacks, and 6 weekly feedbacks	
Problems of the Week	50%
Final Project	20%
Participation/Attendance	20%

## **Journal/Email Feedbacks**

A weekly feedback email needs to be sent to the instructor 6 times over the course of the class. Each email should be at least a quarter of a page and may consist of the following:

- What you learned from the course that day
- What you liked
- What you think can be improved
- Ways that you think something can be modified for the next time that it is taught
- Any other suggestions that you would like to add

## **Problems of the Week**

POW's provide the primary way to practice concepts in class. For maximum credit, follow the format discussed in class, and be sure to clearly explain multiple approaches, strategies, and solutions. Turn your work in on time. If you are dissatisfied with any POW score, you may revise it; however you will be penalized for late work.

## **Final Project**

The final project will be an opportunity to implement the technology learnt in the class. In groups of 2 to 3 you will be asked to create and present a student lesson that integrates technology into a specific mathematics topic.

## **Participation, Attendance**

You are expected to be prepared in class (readings, journals, assignments, supplies) and to participate fully in class discussions. POW presentation, autobiography, and daily participation will be included in this portion of your grade. If you miss more than one class, 2% per week will be deducted for absences.

## **Attendance (mandatory)**

Class attendance is mandatory. If you are unable to attend class, please notify me before class and we will discuss the ramifications.

**UCLA Math Content Programs for Teachers**  
**Math and Technology – Math X472**  
**Course Outline (Subject to Modification)**

**Lead Instructor:** Melissa Canham

**Email:** mcanham1@hotmail.com

Day	Date	Topic(s)	Assignment Due (subject to change)
1		<ul style="list-style-type: none"> <li>• Intro to Computers</li> <li>• MS Word</li> <li>• MathType</li> </ul>	<ul style="list-style-type: none"> <li>• Create a group/mass email and send everyone an introduction of yourself</li> <li>• Email your Tech Autobiography as an attachment to your Instructor</li> <li>• POW #1: Write a quiz and answer key using MathType for a standard at your grade level and email to Melissa</li> </ul>
2		<ul style="list-style-type: none"> <li>• Spreadsheets / Excel</li> </ul>	<ul style="list-style-type: none"> <li>• POW #2: Best Buy</li> <li>• Email Weekly Feedback*</li> </ul>
3		<ul style="list-style-type: none"> <li>• MS Word Continued</li> </ul>	<ul style="list-style-type: none"> <li>• POW #3: Create a graphic organizer for a topic you teach in your class</li> <li>• Email Weekly Feedback*</li> </ul>
4		<ul style="list-style-type: none"> <li>• Presentation Topics</li> </ul>	<ul style="list-style-type: none"> <li>• Work on Final Project</li> <li>• Email Weekly Feedback*</li> </ul>
5		<ul style="list-style-type: none"> <li>• TBA</li> </ul>	<ul style="list-style-type: none"> <li>• Work on Final Project</li> <li>• Email Weekly Feedback*</li> </ul>
6		<ul style="list-style-type: none"> <li>• Intro to TI84</li> <li>• Graphing Calculator Apps</li> </ul>	<ul style="list-style-type: none"> <li>• POW #4: Create a picture on your graphing calculator</li> <li>• Email Weekly Feedback*</li> </ul>
7		<ul style="list-style-type: none"> <li>• TI84 Applications Cont.</li> </ul>	<ul style="list-style-type: none"> <li>• POW #5: Manipulative Comparison</li> <li>• Email Weekly Feedback*</li> </ul>
8		<ul style="list-style-type: none"> <li>• Geometry Sketchpad</li> <li>• Project Presentations</li> </ul>	<ul style="list-style-type: none"> <li>• POW #6: Creating Perpendiculars</li> <li>• Email Presentation Feedback</li> <li>• Email Weekly Feedback*</li> </ul>
9		<ul style="list-style-type: none"> <li>• Geometry Sketchpad</li> <li>• Project Presentations</li> </ul>	<ul style="list-style-type: none"> <li>• Email Presentation Feedback</li> <li>• Email Weekly Feedback*</li> </ul>
10		<ul style="list-style-type: none"> <li>• Geometry Sketchpad</li> <li>• Project Presentations</li> </ul>	<ul style="list-style-type: none"> <li>• Email Presentation Feedback</li> <li>• Email Weekly Feedback*</li> </ul>

\*Participants must send 6 weekly feedback emails to their instructor. You may choose which 6 weeks to complete this part of the homework.

Your grade will be computed as follows:

Journal/Email Assignments	10%
Tech Autobiography, Mass Introduction Email, 2 presentation feedbacks, and 6 weekly feedbacks	
Problems of the Week	50%
Final Project	20%
Participation/Attendance	20%

# **PROBLEM OF THE WEEK GUIDELINES**

- Problems of the Week should be typed for full credit.
- Problems of the Week are due no later than one week from the date assigned.
- Each Problem of the Week should include the following:

## **PURPOSE OF THE PROBLEM**

Restate the problem and briefly explain what the problem is asking. Identify important data clearly enough so that anyone who reads your paper can understand exactly what you were asked to do.

## **PROCESS**

Identify your strategies and approaches clearly. Solve the problem and be sure to include brief explanations and annotations with your work so that your thinking process is clear. It is important that others can follow your logic as well as you can.

## **SOLUTION**

State the solution to the problem.

## **REFLECTION**

In one or two paragraphs, write a brief analysis of your experience in solving this problem. Be sure to discuss what you learned from this problem both as a student and as a teacher. Think about how you can apply what you learned from solving the problem and adapt it to your own classroom and students. You may also include your thoughts about the difficulty of the problem, where you got stuck, what you learned about mathematics or yourself, and how you approached the problem.