**San Francisco State University**  
*Department of Mathematics*  
*Course Syllabus*

**MATH 365**  
**Advanced Number Systems**

**Prerequisites**
Math 165

**Bulletin Description**
Designed for prospective multiple subject credential candidates, continues work done in MATH 165 with decimals and percents. Introduces operations with negative numbers. Additional topics include problem solving and elementary number theory.

**Course Objectives**
The course is designed to continue the work of Math 165 concerning the content of the number strand of the elementary school curriculum. Students should come away with a deep understanding of fractions and various uses of proportional reasoning, the decimal system for expressing fractions, and negative numbers. Work is done on improving students ability to explain their reasoning, as well as, describing complicated procedures, and to produce simple proofs.

**Evaluation of Students**
Students are graded on their ability to write clear explanations and descriptions and to solve problems in the content area of the course. Their grade will be based on weekly problem sets, an in-class or take-home examination and a final examination.

**Course Outline**

<table>
<thead>
<tr>
<th>Topics</th>
<th>Number of Weeks</th>
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<tbody>
<tr>
<td>Proportional thinking and other applications with fractions</td>
<td>4</td>
</tr>
<tr>
<td>Working with the decimal system and scientific notation</td>
<td>5</td>
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<td>--------------------------------------------------------</td>
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<tr>
<td>Use of negative numbers and ways of understanding operations with negative numbers</td>
<td>3</td>
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</tbody>
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**Textbooks and Software**

There is no required text. Work is based on a deep understanding of the content in newer reform texts for secondary schools.

Submitted by: ____________Diane Resek_______     Date: __April 28, 2003__