# Course Outline – Seattle Central Community College

<table>
<thead>
<tr>
<th>Course Prefix &amp; No.:</th>
<th>Title:</th>
<th>Credits:</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH&amp;131</td>
<td>Math for Elementary Teachers 1</td>
<td>5</td>
</tr>
<tr>
<td>Division:</td>
<td></td>
<td></td>
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<tr>
<td>Science &amp; Math</td>
<td></td>
<td></td>
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<tr>
<td>Program/Department:</td>
<td></td>
<td>Mathematics</td>
</tr>
<tr>
<td>Max Class Size:</td>
<td>Course length:</td>
<td>Prerequisite(s):</td>
</tr>
<tr>
<td>32</td>
<td>11 weeks</td>
<td>In last 3 years: MATH098 with 2.0 or instructor permission</td>
</tr>
<tr>
<td>Total Contact Hours:</td>
<td>Lecture: 55</td>
<td>Mode(s) of Delivery:</td>
</tr>
<tr>
<td></td>
<td>(11 h. = 1 cr.)</td>
<td>- On campus self-contained</td>
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<tr>
<td></td>
<td>Lab:</td>
<td>- Correspondence</td>
</tr>
<tr>
<td></td>
<td>Clinical:</td>
<td>- Tele-course</td>
</tr>
<tr>
<td></td>
<td>Other:</td>
<td>- Online instruction</td>
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<tr>
<td></td>
<td>(unsupervised; 33 hrs. = 1 cr.)</td>
<td>- Hybrid (e.g., online and on campus)</td>
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<tr>
<td></td>
<td></td>
<td>- Other (please describe): _________________</td>
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## Course Description

This is a course primarily for students in the AA degree program for Elementary Education, however it is also a required prerequisite for many of the MIT programs in WA. The course delves deeply into the mathematics elementary teachers are responsible for teaching at the K-8 levels. The mathematics studied in this course includes: quantitative analysis strategies, computing with whole numbers, fractions, decimals and percents; multiplicative comparisons and reasoning; ratio, rates, and proportions; negative numbers; and algebraic concepts. Fulfills QSR requirement for the AA degree. Minimum 2.0 required to meet the IA proficiency requirement and QSR.

## Learning Outcomes

1. **Apply various problem-solving methods**
2. **Examine bases other than ten and relate them to our number system**
3. **Develop graphical and symbolic models for simple functions**
4. **Critique alternative solution strategies to help K-8 students learn math concepts**

As a result of taking this course, students will be able to: 

1a Use problem-solving models and apply them to concepts introduced in the course  
1b Use various algorithms, mental math computations, manipulatives, calculators, and electronic computing techniques for solving problems dealing with whole numbers, fractions, decimals, percentages, integers, patterns, functions, and graphs  
2a Relate operations in bases other than 10 to the structure of our number system and describe how this structure relates to learning mathematics  
2b Add, subtract and multiply using bases other than ten  
3a Develop graphical representations and symbolic models for functions (such as position/time, total distance/time, and speed/time graphs)  
4a Critique K-8 students' problem solving strategies  
4b Apply mathematics across another discipline (such as art, music, motion, culture, or literature)

## Program/Degree Outcomes

This course addresses the following program or degree outcomes:  

- Develop and use skills in critical thinking, quantitative analysis
- Develop and use skills for in-person interactions with individuals and within groups.
- Use methods and modes of inquiry specific to mathematics
- Demonstrate effective oral and written communication, teamwork and collaboration in mathematical settings
- Demonstrate academic honesty and ethical behavior

**Topical Outline and/or Major Divisions**

This course covers topics such as the following, and may vary depending on instructor:

- Reasoning about quantities
- Numeration systems
- Whole number operations
- Conventional ways of computing
- Using numbers estimation & mental computation
- Scientific notation
- Meaning for fractions
- Computing with fractions
- Multiplicative comparisons and reasoning
- Ratios, rates, proportions, & percents
- Signed numbers
- Algebra and patterns
- Quantitative approach to graphing
- Change: relationships among time, distance, and rate of change

**Distribution Area**

- Natural World

**Additional Information**

- CAC: Use Only
- Special Designation (s) [QSR] [IS] [C] [GS] [US] [None]

**Outline Prepared by:** Andrea Levy & Jerry Wright  
**Date:** Nov 2012