Intermediate Mathematics for Elementary Teachers

Course Description
Elementary concepts of geometry and measurement, probability, and statistics with an emphasis on problem solving and critical thinking.

Course Prerequisites
Two years of high school algebra and one year of high school geometry.

Course Time and Meeting Place
- MTH 128 Section 001 meets in Math 205 at 11:00-12:15 TR
- MTH 128 Section 002 meets in Math 205 at 12:30-1:45 TR

Instructor
- Dr. W. D. Clark
  Department of Mathematics and Statistics
- Office: Math 314
- TEL: Ofc (936) 468-1750  Home (936) 569-0522  Cell (936) 554-3371
- Email: clark@sfasu.edu
- Office Hours:
  Monday 10-11 and 2-3
  Wednesday 10-11 and 2-3
  Additional office hours by appointment

Course Goals
- To understand the mathematics essential to successful teaching in the elementary school classroom.
- To acquire a foundation in geometry, statistics, probability, and counting.
- To gain skill in problem solving and critical thinking.

Learning Objectives
At the end of MTH 128, a student who has studied and learned the material should be able to:
- Use problem solving strategies to model, construct, and solve problems within and outside mathematics
- Use technology to explore geometric concepts and perform geometric constructions and transformations
- Apply spatial visualization skills to construct, transform, and measure two and three dimensional objects
- Apply concepts of congruence and similarity
- Understand measurement as a process and apply basic concepts of measurement to real world settings
- Use basic counting principles and apply concepts of probability theory
- Apply basic concepts of statistics, including data classification, collection, and analysis

There are no specific program learning outcomes for this major addressed in this course. It is a general education core curriculum course and/or a service course.

Textbook
The textbook for this course is Mathematics for Elementary Teachers, Beckmann 0321901231 Pearson 4th
The Classroom
Any questions you ask in class will likely be ones that other students will want answered as well, so get over any hesitation you might have and ask questions as the material is presented. You will not be penalized for doing this, no matter how trivial or simple you think your questions might seem. Remember, the class is being held for you to learn the material, not just to give you a time to copy notes off of a blackboard, so be sure to get help when you need it and stay involved in your class.

Calculators
A simple four-function calculator will work fine for this course. We encourage you to bring your calculator to class with you every day. However, you should not rely on computers and calculators to such an extent that they keep you from developing your own skills. Technology should be used as an aid, but without a good understanding of the underlying mathematical concepts, the calculator will quite happily mislead you without your even knowing it. In general, technology is a good thing, but as with everything, sometimes too much of a good thing can lead to problems. For this reason, we may not allow calculators to be used on certain exams or parts of certain exams. You may not use your cellphone or your iPod/iPad in class for a calculator.

Grading and Exams
The will be three 50 minute exams and a final exam. Your course grade will be determined as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Date</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Book Homework</td>
<td>Book assignment due dates on calendar</td>
<td>10%</td>
</tr>
<tr>
<td>WW Homework</td>
<td>WW assignments and quiz due each Wednesday</td>
<td>10%</td>
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<tr>
<td>Exam I</td>
<td>Thursday 2/9/17</td>
<td>20%</td>
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<tr>
<td>Exam II</td>
<td>Tuesday 3/7/17</td>
<td>20%</td>
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<tr>
<td>Exam III</td>
<td>Thursday 4/20/17</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
<td><strong>Monday, Dec. 11, 2017</strong>&lt;br&gt;<strong>6:45-8:45pm, Room 101 Math Bldg</strong></td>
<td>20%</td>
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Semester numerical scores will be converted into letter grades according to the following method.

<table>
<thead>
<tr>
<th>Range of numerical values</th>
<th>Corresponding Letter</th>
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<tbody>
<tr>
<td>90-100</td>
<td>A</td>
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<tr>
<td>80-89</td>
<td>B</td>
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<tr>
<td>70-79</td>
<td>C</td>
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<tr>
<td>60-69</td>
<td>D</td>
</tr>
<tr>
<td>0-59</td>
<td>F</td>
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When we calculate your final grade at the end of the course, we will calculate a score on a 0-100 point scale using the scores that you have obtained during the course, and the grade breakdown given above. Your course grade will then be obtained using this table. Resurrection Policy. If you score better on the final exam than your lowest exam I, II or III, we will replace your lowest grade with your final exam grade. The resurrection policy does not apply to your homework grade.

Important Information about the Math 128 Final Exam
The final exam for all MTH 128 is on Monday, December 11, 2017, 6:45-8:45pm in room 101 Math Bldg.
Cell phone use is not permitted in or out of the classroom during all exams. If you bring your cell phone to the exam venue, please remember to turn it off. Violation of this policy will be considered as academic dishonesty and dealt with accordingly. You will not be permitted to use your cell phone as a calculator, so plan ahead.
Exam Policy
Exams are scheduled far in advance, and it is impossible to move the time or date. However, in rare cases where it is impossible for an individual to take the exam at the scheduled time, we will work with you to make other arrangements. Exceptions for taking the exam out of sequence are the following:

1. A medical excuse. Please provide proper documentation according to university rules.
2. A University sponsored event such as an athletic tournament, a play, or a musical performance. Your coach or director must contact us in advance. Athletic practices and rehearsals do not fall into this category.
3. A religious holiday. Please send a short email explaining the situation.
4. Extreme hardship such as a family emergency. Please have the proper university office notify us.

The above are the only allowable excuses for taking the exam before the scheduled time. Under no circumstances do we give late exams. Since we can only accommodate a limited number of students taking the exam at an earlier time, please make sure that you fall into one of the above categories before you contact us. If you miss an exam due to illness or a family emergency, you will not be penalized. Your final exam grade will also count as the grade for a test you miss. If you have a conflict with the final exam (other than another exam at the same time), you must contact the Registrar. Only the Registrar can schedule an out-of-sequence final exam.

Homework
Online homework is required using WeBWorK. Homework will also be assigned from our textbook and graded. Your daily average is based on your grades from WeBWorK homework, homework from the textbook, and any other daily grades that are assigned for a grade.

Making Your Homework Easy to Read and Easy to Grade

- Make sure your handwriting is legible.
- Homework with multiple pages should be stapled in the upper left-hand corner.
- Use only the front side of your paper for your homework assignments.
- In the upper right-hand corner you should write (in this order):
  - Your name
  - MTH 128.section number (001 or 002)
  - The homework set number
  - The due date of the homework
- Problems should be clearly labeled and numbered on the left side of the page. There should also be a visible separation between problems. Don’t forget to staple your homework together if you are submitting several pages.
- You should leave the entire left margin blank so that the grader can use this space for scoring and comments.
- To ensure that each problem is graded, problems and solutions should be written in the order that they are assigned.
- It is good practice to first work out the solutions to homework problems on scratch paper, and then to neatly write up your solutions. This will help you turn in a clean finished product.
- You should write up your solutions by yourself. You should always acknowledge any help received at the top of the assignment or in the right-hand margin.
- Homework is to be turned in at the beginning of class.
- Late homework is not accepted as is homework that does not follow the guidelines above.

Getting Help with Math 128

- Individual and group help is available at the Academic Assistance and Resource Center, which is located on the first floor of the Steen Library.
- The SI for Math 128 is Bailey Freeman. (freemanbe@jacks.sfasu.edu)
- Take advantage of office hours.

Add/Drop Policy
The Add/Drop Policy can be found at http://www.sfasu.edu/policies/add_drop.asp
Attendance Policy
Regular attendance is expected in Math 128. Attendance and Excused Absences Policy can be found at http://www.sfasu.edu/policies/class_attendance_excused_abs.asp

Withheld Grades Semester Grades Policy (A-54)
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average. The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

Students with Disabilities
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/

Acceptable Student Behavior - In short, just be nice!
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed. Please be respectful of your fellow students and your instructor. Cell phone use and texting are not allowed in class. Remember to turn your cell phone off or place it in quiet mode before entering the classroom.

Academic Integrity (A-9.1)
Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Definition of Academic Dishonesty. Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit. Any acts of academic dishonesty will be dealt with according to University policy. Penalties for academic dishonesty may result in a failing grade for the assignment, failing the course, or even dismissal from the university. Please read the complete Academic Integrity Policy at http://www.sfasu.edu/policies/academic_integrity.asp
# Mathematics 128  
Intermediate Mathematics for Elementary Teachers  
TR - Fall 2017 Tentative Calendar

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Activity (used on this date)</th>
<th>Assignment (due on this date)</th>
<th>Section, Page and Problem Numbers</th>
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<tbody>
<tr>
<td>1</td>
<td>Tuesday 8/29/17</td>
<td>Introduction</td>
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</table>
|      | Thursday 8/31/17 | 10.1 Visualization  
10.2 Angles                                          | 10D, 10E, 10F                |                               |                                   |
| 2    | Tuesday 9/5/17 | 10.2 Angles (con’t.)                               | 10G, 10I                     | 1                             | 10.2: pp. 452-453 #2              |
|      | Thursday 9/7/17 | 10.4 Circles and Spheres                           | 10N, 10O                     | 2                             | 10.2: p. 454 #11                  |
| 3    | Tuesday 9/12/17 | 10.5 Triangles, Quadrilaterals and Other Polygons  | 10R, 10S, 10T                | 3                             | 10.4: p. 465 #2, 3               |
|      | Thursday 9/14/17| 10.5 Triangles, Quadrilaterals and Other Polygons (con’t) | 10U, 10V, 10W                | 4                             | 10.5: p. 476-478 #3, 17          |
| 4    | Tuesday 9/19/17 | Video                                             |                              | 5                             | 10.5: p. 476-478 #8, 11          |
|      | Thursday 9/21/17| Exam 1: Chapter 10                                |                              |                               |                                   |
| 5    | Tuesday 9/26/17 | 11.1 Fundamentals of Measurement  
11.4 Converting from One Unit of Measurement to Another | 11A, 11C  
11F, 11G                |                               |                                   |
|      | Thursday 9/28/17| 11.2 Length, Area, Volume, and Dimension  
12.1 Areas of Rectangles Revisited  
12.2 Moving and Additivity Principles About Area | 11B, 12A, 12B  
12C                | 6                             | 11.1: p. 492-493 #3  
11.4: p. 509 #1, 3       |
| 6    | Tuesday 10/3/17 | 12.3 Areas of Triangles                            | 12D, 12E, 12F, 12G           | 7                             | 12.1: p. 518 #4ab  
12.2: pp. 522-523 #3ab, 6        |
<p>|      | Thursday 10/5/17| 12.4 Areas of Parallelograms and Other Polygons    | 12H, 12I, 12J               | 8                             | 12.3: p. 531 #2, 9               |
| 7    | Tuesday 10/10/17| 12.6 Areas of Circles and the Number Pi            | 12O 12P                      | 9                             | 12.4: pp. 536-537 #4abc, 9       |
|      | Thursday 10/12/17| 12.8 Contrasting and Relating the Perimeter and Area of Shapes | 12R 12S              | 10                            | 12.6: p. 548 #1, 5               |
| 8    | Tuesday 10/17/17 | Exam 2 Chapters 11 and 12                         |                              | 11                            | (12.8: p. 557 #4, 6, 9)          |</p>
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<tr>
<th>Date</th>
<th>Section</th>
<th>Notes</th>
<th>Problems</th>
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| Thursday 10/19/17 | **13.1 Polyhedra and Other Solid Shapes**  
**12.9 Using the Moving and Additivity Principles to Prove the Pythagorean Theorem** | 12U, 12V  
13A, 13B | 12.9: p. 563 #1, 6  
13.1: p. 574 #3 |
| Tuesday 10/24/17 | **13.2 Patterns and Surface Area** | 13E, 13F, 13G, 13 | 12 |
| Thursday 10/26/17 | **13.3 Volumes of Solid Shapes** | 13K, 13L, 13M, 13N | 13  
13.2: p. 583 #10, 13, 15 |
| Tuesday 10/31/17 | **14.1 Reflections, Translations, and Rotations** | 14A, 14B | 14  
13.3: p. 591-593 #2, 15, 18 |
| Thursday 11/2/17 | **14.2 Symmetry**  
**14.3 Congruence** | 14D, 14E  
14I (J) | 15  
14.1: pp. 604-605 #4, 8, 12 |
| Tuesday 11/7/17 | **14.4 Constructions with Straightedge and Compass** | 14L, 14M | 16  
14.2: p. 614 #8  
14.3: p. 623 #1, 6 |
| Thursday 11/9/17 | **14.5 Similarity** | 14S (14P) | 17  
14.4 : p. 628#1, 4 |
| Tuesday 11/14/17 | **14.6 Areas, Volumes and Scaling** | 14U  
(14X, 14V) | 18  
14.5: p. 644 #11, 18, 23 |
| Thursday 11/16/17 | | | **Exam 3 Chapters 13 and 14** |
| Thanksgiving Holiday | | | |
| Thanksgiving Holiday | | | |
| Tuesday 11/21/17 | | | **Thanksgiving Holiday** |
| Thursday 11/23/17 | | | **Thanksgiving Holiday** |
| Tuesday 11/28/17 | **15.1 Formulating Statistical Questions, Gathering Data, and Using Samples**  
**15.2 Displaying Data and Interpreting Data Displays** | 15A, 15B  
15E, 15G | 15.1: pp. 661-662 #5,10  
15.2: pp. 672-673 #3ab, 5abc |
| Thursday 11/30/17 | **15.3 The Center of Data: Mean, Median, and Mode** | 15K, 15L  
15N | 21 |
| Tuesday 12/5/17 | **15.4 Summarizing, Describing, and Comparing Data Distributions** | 15T, 15U  
15V | 22  
15.3: pp. 681-682 #3, 9, 13 |
| Thursday 12/7/17 | | | Video |
| Monday 12/11/17 | | | **Final Exam 6:45-8:45 Room 101 Math Bldg** |

*Final Exam 6:45-8:45 Room 101 Math Bldg*