Introduction to Mathematics for Elementary Teachers

Course Description
Elementary concepts of sets, numeration systems, number theory, and properties of natural numbers, integers, rational, and real number systems 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
- Online at https://d2l.sfasu.edu

Instructor
- Stacia Prince
  Department of Mathematics and Statistics
- Office: Math 334
- TEL: (936) 468-6262
- Email: princes@sfasu.edu

Expect to receive response to email within 24 hours on weekdays and 48 hours on the weekends when using the sfasu email.
- Office Hours: Anytime my door is open, by appointment or
  - Monday: 1:00pm-2:00pm, Bush Mathematics Building Room 334
  - Tuesday: 9:30pm-11:00pm, Bush Mathematics Building Room 103J
  - Wednesday: 1:00pm-2:00pm, Bush Mathematics Building Room 334
  - Thursday: 9:30pm-11:00pm, Bush Mathematics Building Room 103J

Current Text and Materials
The textbook for this course is
Mathematics for Elementary Teachers, Beckmann 0321901231 Pearson 5th

*** You will need a collection of approximately 1000 toothpicks and 30 rubber bands to complete required activities.

Course Goals
- To understand the mathematics essential to successful teaching in the elementary school classroom.
- To acquire a foundation in numeration systems, number theory and properties of the natural numbers, integers, rational, and the real number system.
- To gain skill in problem solving and critical thinking.

Student Learning Outcomes (SLO):
At the end of MTH 127, a student who has studied and learned the material should be able to:
1. Solve a variety of problems using multiple problem-solving techniques. [CO 1,3]
2. Demonstrate understanding of core concepts underlying standard and non-standard algorithmic procedures for performing operations on subsets of real numbers. [CO 1,3]
3. Communicate his/her knowledge effectively in multiple formats – verbally, concretely, and in writing. [CO 2]
4. Define, identify, and use the fundamental properties of real number operations. [CO 3]
5. Provide logical justification of mathematical thinking. [CO 1]
6. Use mathematical language and notation appropriately to communicate ideas. [CO 2]
Program Learning Outcomes
This is a general education core curriculum course and no specific program learning outcomes for this major are addressed in this course.

Calculators
Calculators will not be used in this course.

Course Requirements:
- Final exam (lasting 2.5 hours)
- Three 75 minute in-class exams (either on SFA campus at appointed times or with a proctor at another location), dates listed below
- D2L access. You will be required to access SFA’s Learning management Software (at https://d2l.sfasu.edu) daily
- Homework from the textbook will be collected (via dropbox on d2L) and graded. Read the homework grading policy as found on D2L carefully. Some assignments may be returned to you for additional effort before a grade is entered.
- Attendance (online) and participation (online) are expected. This course is taught with an emphasis on inquiry rather than lecture. Learning within this framework requires active participation
- Reading the textbook is essential to the learning process and is expected. You should read the section to be covered carefully before attempting investigations (activities), discussions, or homework problems. It will likely be necessary to read each section more than once.
- Additional assignments at the instructor’s discretion
- There is NO extra credit
- Initiative to seek help outside of class, in the professor’s office, through Supplemental Instruction, or the AARC may be necessary in order to succeed in the course

Calculators
Calculators will NOT be used in this course. The mathematics we cover is at the elementary level, and most of our time will be spent on understanding and explaining content deeply. Teacher candidates should be fluent in all required computations. Ask for help if you need it and be prepared to spend additional time outside of class practicing computations until you become comfortable doing them without a calculator.

Attendance Policy
Attendance and participation are expected. This course is taught with an emphasis on inquiry rather than lecture. You will be required to participate in discussion posts and other activities online as part of your grade.

Grading and Exams
There will be three 75 minute exams during the semester and a 2.5 hr. comprehensive final exam. For each exam, you may choose to either take it on SFA campus on the date and time specified in the Course Timeline or you may choose to take it with a proctor (that you have made arrangements with) on the exam day(s) listed below. Your course grade will be determined as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Date</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>Written homework problems submitted online, discussion posts, d2L quizzes,</td>
<td>30%</td>
</tr>
<tr>
<td>Exam 1</td>
<td>February 10-12, On Campus Proctoring February 12</td>
<td></td>
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<tr>
<td>Exam 2</td>
<td>March 16-18, On Campus Proctoring March 18</td>
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<tr>
<td>Exam 3</td>
<td>April 20-22, On Campus Proctoring April 22</td>
<td>35%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>May 4-6, On Campus Proctoring May 6</td>
<td>35%</td>
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</tbody>
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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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</thead>
<tbody>
<tr>
<td>90-100</td>
<td>A</td>
</tr>
<tr>
<td>80-89</td>
<td>B</td>
</tr>
<tr>
<td>70-79</td>
<td>C</td>
</tr>
<tr>
<td>60-69</td>
<td>D</td>
</tr>
<tr>
<td>0-59</td>
<td>F</td>
</tr>
</tbody>
</table>

When I calculate your final grade at the end of the course, I 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 midterm exam, we will replace your midterm grade with your final exam grade. The resurrection policy only applies to exams.

**Exam Policy**

Exams in this course must be proctored. You may take exams at the SFA campus with a proctor during the time and day specified in the Course Timeline or you may elect to take exams with an approved proctor at another location during the specified time period listed in the Course Timeline in the Getting Started module. If you choose to take exams at another location, it is **YOUR** responsibility to secure a proctor and submit contact information to the instructor. Please see the “Exam Proctoring Instructions” document provided on D2L for more information.

Exams must be taken within the range of dates listed above. Exams may be taken at other locations (other than SFA) anytime during the given date range. There should be no reason to miss an exam other than:

1. A medical excuse. Please provide proper documentation according to university policy.
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 previous list 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. The missed exam will be replaced with the final exam grade. 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.

**The Class Environment**

- The format for this course will probably be different from your previous math classes. Students spend time working, discussing, and explaining problems. You should not expect that the instructor will lecture, or that you will have a clearly defined set of notes or PowerPoint-type slides. Instead, you and your classmates will construct your own knowledge with the professor facilitating discussions and asking questions. Getting used to this format requires some time, so be patient.
- I will send emails to the entire class during the course. Check your D2L email daily.

**Making Your Homework Easy to Read and Easy to Grade**

- Make sure your handwriting is legible.
- In the upper right-hand corner you should write (in this order)
  - Your name
  - MTH 127.501
  - Section and problem 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.
- 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.
- Individual and group help is available at the Academic Assistance and Resource Center, which is located on the first floor of the Steen Library.
- Take advantage of the instructor by emailing questions or setting up an appointment for a meeting.

The following is an excerpt from SFA Policy 5.4:

The federal definition of a credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates:

7. Not less than one hour of classroom or direct faculty instruction and a minimum of two hours out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or 10 to 12 weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time, or;

8. At least an equivalent amount of work as outlined in item 1 above for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

To this end, all students in courses offered by the Department of Mathematics and Statistics that wish to be successful should plan to spend a minimum of two hours outside of class for every credit hour associated with this course. Expected activities to be completed in the time outside of class include reviewing notes from previous class meetings, reading assigned course resources, completing all assigned exercises and projects, and performing periodic assessment preparation.

See http://www2.sfasu.edu/math/docs/syllabi/MTH127Syllabus.pdf for elements common to all sections.