MTH 1350: Introduction to Mathematics for Elementary Teachers

Course Description

Prerequisite(s): MATH 0199 or TSI complete/exempt status in mathematics
Properties of the natural numbers, integers, rational, and real number systems, and number theory, with an emphasis on problem solving and critical thinking
http://www2.sfasu.edu/math/courses/syllabi/MTH1350Syllabus.pdf

Course Prerequisites
A minimum math score of 230 on THEA, 19 on ACT, 500 on SAT or a C or better in MTH 099. The Department of Mathematics and Statistics strongly recommends a minimum math score of 270 on THEA, 21 on ACT, 500 on SAT or a C or better in MTH 099 before taking any credit-level mathematics course.

Course Time and Meeting Place
Bright Space (D2L)

COVID-19 MASK POLICY
Masks (cloth face coverings) must be worn over the nose and mouth at all times in this class and appropriate physical distancing must be observed. Students not wearing a mask and/or not observing appropriate physical distancing will be asked to leave the class. All incidents of not wearing a mask and/or not observing appropriate physical distancing will be reported to the Office of Student Rights and Responsibilities. Students who are reported for multiple infractions of not wearing a mask and/or not observing appropriate physical distancing may be subject to disciplinary actions.

Instructor
Department of Mathematics and Statistics
Name: Marissa Rotenberry
Email: rotenberm@sfasu.edu
Office Hours – all through Zoom: 12-1 pm Monday-Thursday, or email me to set up an appointment
Zoom meeting link: https://sfasu.zoom.us/my/rotenberry?pwd=Q0pJTEZsVnNXZlNuoU9CWhE5a3ZuUT09
Zoom meeting ID: 343 914 7977
Zoom meeting passcode: letmein

Current Text and Materials
The required textbook for this course is Mathematics for Elementary Teachers, 5th ed., by Sybilla Beckman. You will not need to purchase access to MyMathLab. The textbook is available in hardback (ISBN 9780134392790), loose-leaf (ISBN 9780134423319), or electronic “Ebook” (ISBN 9780134423401) formats. Any format is acceptable. This textbook will also be used in both MATH 1351 and MATH 1352.

Calculators
Although no calculator is required for MATH 1350, a simple four-function calculator might be useful. 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.
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 1350, 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
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.

Grading and Exams
There will be three 75-minute exams during the semester and a 2-hour comprehensive final exam. 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>Class assignments due according to dates on the 1350 Tentative Course Calendar in the Course Documents folder in Bright Space (D2L).</td>
<td>20%</td>
</tr>
<tr>
<td>Exam 1</td>
<td>Tuesday, July 6, 8:00am to 10:00pm</td>
<td>20%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>Tuesday, July 20, 8:00am to 10:00pm</td>
<td>20%</td>
</tr>
<tr>
<td>Exam 3</td>
<td>Thursday, July 27, 8:00am to 10:00pm</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Thursday, August 5, 8:00am to Friday, August 6, 3:00pm</td>
<td>20%</td>
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</tbody>
</table>

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>
</tr>
</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 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 a 70% or better on the final exam, we will replace your lowest midterm grade with your final exam grade if the midterm grade is lower. The resurrection policy does not apply to your homework grade.

Exam Policy
Exams are scheduled with a window in which you will take the exam far in advance. It is not possible to move the time or date. In rare cases due to unavoidable circumstances an individual will have an emergency during the scheduled time. In case of an emergency notify the instructor immediately. 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 Office of Student Rights and Responsibility 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. 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.

**Discussion Boards**

MTH 1350 is an activities-based course. The discussion boards in this course are used for you to discuss the activities and ask questions for a better understanding of the concepts. The activities along with the textbook will help you develop an understanding of the concepts in each section. Any questions you have will likely be questions other students want answered as well, so please do not have any hesitation about asking questions about the material on the general discussion boards for each module in Bright Space (D2L). No matter how trivial or simple you think your questions might seem. Remember, in an online class format we do not meet on a regular basis, so it is important to ask questions in this format. Notice, there are general discussion boards and required discussion boards. See the MTH 1350 Tentative Course Calendar for specific assignments and due dates.

**Homework and Quizzes**

All assignments can be found on the MTH 1350 Tentative Course Calendar. Homework will be assigned from our textbook and graded. Textbook homework is due every Tuesday and Thursday night at 11:59pm. Textbook homework should be scanned and uploaded as a single PDF to the appropriate dropbox in Bright Space (D2L). Your daily average is based on your grades from textbook homework, quizzes, and any other graded assignments. The lowest homework grade will be dropped. Late homework will not be accepted.

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

- Make sure your handwriting is legible.
- Homework with multiple pages should be scanned as a single PDF to upload in the appropriate D2L dropbox folder.
- In the upper right-hand corner, write your name and page number.
- 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.
- I will give feedback on each problem using the annotated notes and/or the Feedback section in the dropbox folder.

**Getting Help with Math 1350**

- Take advantage of office hours and email. Please use the rotenberm@sfasu.edu email to receive the quickest response. I will make every effort to answer emails within 24 hours on weekdays and within 48 hours on weekends.
- Individual and group help is available at the Academic Assistance and Resource Center (AARC), which is located on the first floor of the Steen Library or virtual.
- I know you can “Google” almost any information but developing an understanding of the concepts in this class is much more important than a correct answer on an assignment. This is why I give feedback on homework and allow you to redo homework questions based on the feedback before I enter a grade on the textbook homework.
Course Outline:

- Techniques of problem solving and estimation skills  
  Explicit instruction in Critical Thinking, Communication and Empirical and Quantitative Reasoning is in addition to implicit instruction, modeling and practice that occur daily in the discussion of numbers and operations. This explicit instruction includes explanation of solving mathematical problems by thinking critically, communicating logically ordered solutions with complete and correct notation, and applying empirical or quantitative skills as appropriate to the problem.

*The following topics will be threaded throughout the course in order to develop the habits of mind necessary to be successful in mathematics:*
  - Introduce Polya’s Problem Solving Process: Understand the Problem, Devise a Plan, Carry Out Plan, Look Back
  - Explore Basic Problem-Solving Strategies
  - Explore Patterns in Language and Numbers
  - Develop Estimation Skills with Mental Arithmetic
  - Investigate temperature as a form of measurement

- Whole Numbers and Numeration: Concepts and Algorithms
  - Define the Set of Whole Numbers
  - Model Whole Number Operations using a Variety of Methods
  - Verify Properties of Operations: Commutative, Associative, Distributive Property-Multiplication over Addition, Multiplication by Zero; Division Algorithm
  - Explore Place Value in Base-10 System
  - Develop and Apply Algorithms for Whole Number Operations
  - Develop Definition and Properties for Whole Number Exponents

- Number Theory: An Introduction
  - Define and Explore Primes and Composites
  - Explore Basic Divisibility Properties of Sums and Products
  - Define the GCD and LCM and Use Algorithms for Finding Each

- Integers: Concepts and Algorithms
  - Model Integer Operations Using a Variety of Methods
  - Investigate Extensions of Whole Number Operations and their Properties: Commutative, Associative, Distributive Property of Multiplication over Addition, Multiplication by Zero

- Real Numbers: Concepts and Algorithms
  - Investigate Practical Uses for Fractions
  - Explore Connections between Fractions, Rational Numbers, Decimals, and Percents
  - Investigate Order of Numbers in Decimal Form
  - Illustrate the Pythagorean Theorem
  - Develop Proportional Thinking to Include Ratio and Proportion

Credit Hours

*Per SFA policy 5.4, your schedule should reflect that there is (1) an amount of student work per credit hour that reasonably approximates not less than one hour of class or direct faculty instruction and two hours of out-of-class student work per week for fifteen weeks over a long semester, or the equivalent amount of work over a different amount of time; or (2) 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.*

Attendance Policy

Regular attendance is expected in Math 1350. Attendance in an online class is based on class participation on the Discussion Boards. Attendance and Excused Absences Policy can be found at [http://www.sfasu.edu/policies/class_attendance_excused_abs.asp](http://www.sfasu.edu/policies/class_attendance_excused_abs.asp)

Add/Drop Policy

The Add/Drop Policy can be found at [http://www.sfasu.edu/policies/add_drop.asp](http://www.sfasu.edu/policies/add_drop.asp)

Academic Integrity (Policy 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.

The penalty for a student found cheating on any part of an assignment, quiz, or exam in this class will range from a grade of zero on the work to a grade of F in the course, and may result in additional, more severe disciplinary measures. A student who
allows another to copy his work and the student copying the work are both guilty of cheating. Do your own work. Do not show your completed work to others. Do not allow others to copy your work.

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.

Please read the complete policy at http://www.sfasu.edu/policies/academic_integrity.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
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 http://www.sfasu.edu/policies/student_conduct_code.asp) 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.