Fall 2017 Course Syllabus
Math 1384: Foundations of Mathematics for Elementary Teachers I

Instructor: Margaret Young
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Teaching Schedule:

Tuesday/Thursday:	Math 1385 (Section 03): 8:00 – 9:20 AM;	LDB 431
	Math 1314 (Section 09): 9:30 – 10:50 AM;	LDB 219
	Math 1384 (Section 06): 12:30 – 1:50 PM;	LDB 431
	Math 1314 (Section 06): 2:00 – 3:20 PM;	LDB 209
	Math 1384 (Section 07): 3:30 – 4:50 PM;	LDB 431
	Math 1314 (Section 22): 6:00 – 7:20 PM;	LDB 209

Office Hours:
Tuesday/Thursday: 11:00 – 12:00 PM @ LDB 413
Additional Times Available By Appointment

Course Description:
This course is the first in a series of courses designed to develop the necessary foundations in mathematics for prospective elementary teachers. Students are expected to practice communication skills and participate in hands-on activities, including the use of math manipulatives and technology. Topics will include National and Texas standards for teaching mathematics, sets, numerations systems, natural numbers, integers, number theory, and rational numbers. Throughout the course, the five main themes recommended by the National Council of Teachers of Mathematics (NCTM) Principles and Standards (problem solving, reasoning, communication, connections, and representation) will be emphasized. Students will also participate in class discussions and group work during this course.
Prerequisite: THEA score of 250 or Math 0332 with a passing grade.
Credit: 3 semester hours

Course Objectives:
Upon completion of this course, students will be able to:

- Analyze the structure of numerations systems and the roles of place value and zero in the base ten system.
- Understand the relative magnitude of whole numbers, integers, rational numbers, and real numbers.
- Demonstrate an understanding of a variety of models for representing numbers.
- Demonstrate an understanding of equivalency among different representations of rational numbers.
- Select appropriate representations of real numbers for particular situations.
- Understand the characteristics and properties of the set of whole number, integers, rational numbers, and real numbers.

- Demonstrate an understanding of how some situations that have no solution in one number system (e.g., whole numbers) have solutions in other number systems (e.g., real numbers).
- Work proficiently with real numbers and their operations.
- Analyze and describe relationships between number properties, operations, and algorithms for the four basic operations involving integers, rational numbers, and real numbers.
- Use a variety of concrete and visual representations to demonstrate the connections between operations and algorithms.
- Justify procedures used in algorithms for the four basic operations with integers, rational numbers, and real numbers, and analyze error patterns that may occur in their application.
- Work proficiently with decimals and their operations.
- Use a variety of concrete and visual representations to demonstrate connections between decimal operations and algorithms.
- Relate operations and algorithms involving numbers to algebraic procedures.
- Extend and generalize the operations on rational numbers and integers to include exponents, their properties, and their applications to real numbers.
- Demonstrate an understanding of ideas from number theory (such as prime factorization, greatest common divisor) as they apply to whole numbers, integers, and rational numbers, and use these ideas in problem situations.
- Apply properties of real numbers to solve a variety of theoretical and applied problems.

Required Textbook:

Sowder, J., Sowder, L., & Nickerson, S. (2017). *Reconceptualizing mathematics for elementary school teachers*. New York, NY: W. H. Freeman.

This text is intended to be a consumable resource for students. You are encouraged to write in your text (space is provided in the margins of the text) and to keep your notes and work for use in future methods courses, as well as classroom teaching. The pages of the text are perforated and may be easily removed. You may wish to create your own resource notebook by combining pertinent pages from the text, class notes, and completed assignments. Supplemental materials will be provided by the instructor.

Supplies:

Bring the following supplies to each class meeting:

- Colored pencils, crayons, or markers
- A scientific or graphing calculator

Course Format:

The expected course outcomes will be realized through a variety of instructional procedures. These strategies include, but are not limited to, the following: student inquiry, lecture, expository-discussion, demonstration, and small group activities. The instructor will appropriate multimedia technology as it connects to course objectives. Notes, assignments, and other useful information will be posted on Blackboard throughout the semester.

References:

- *Principles and Standards for School Mathematics [PSSM]* (on line- www.nctm.org)
- *2006 Curriculum Focal Points (PK-Gr. 8)*, published by NCTM
- NCTM Journals: *Teaching Children Mathematics; Mathematics Teaching in the Middle School*
- *UT-Dana Center – http://www.utdanacenter.org/*

- www.utdanacenter.org/mathtoolkit - sample lessons to help clarify the TEKS.
- http://illuminations.nctm.org/ [click on Lessons, Standards, Tools, or Web resources]

Web sites for information on teacher preparation and mathematics standards:
http://www.tea.state.tx.us -- Texas Math Curriculum (TEKS) and Student Assessment (TAKS)
http://www.nctm.org --- PSSM, 2000, National standards for school mathematics (K-12) recommended by the National Council of Teachers of Mathematics (NCTM).

EVALUATION PROCEDURES AND GRADING POLICIES
Your final course grade for Math 1384 will be based on the following criteria. Please take time to familiarize yourself with the details of these assessments.
Course Assessments:

- Three Unit Tests (100 pts x 3)……300 points
  - **Exam dates are posted on the attached tentative schedule.** If you are unable to take an exam due to an Official University excused absence, you need to schedule a time to take the exam prior to the exam date. If you should miss an exam due to an unforeseeable emergency situation, **YOU MUST CONTACT ME PRIOR TO THE NEXT CLASS MEETING** to schedule a date to make up the exam. **NO EXAM GRADES WILL BE DROPPED.**
- Quizzes/Homework ……100 points
  - A minimum of 12 assignments will be collected without prior notice. The top ten scores will be applied toward total points earned. These responses will be collected **at least 12** times over the course of the semester and will be **worth 10 points** each. Your **best 10 of 12** will be counted toward your final point total. Homework checks will include in-class work as well as out-of-class assignments. Because you will drop your lowest 2 scores, **NO LATE WORK WILL BE ACCEPTED.**
- Modeling Manual (Unit 3)……50 points
- Final Exam (Comprehensive)……150 points
- Arithmetic Test ……50 points
  - A ten-question test will be administered on the first day of class. This test will cover addition, subtraction, multiplication, and division of whole numbers, fractions, and decimals. Calculators are NOT allowed on the arithmetic test.
  - **Scoring:** Scores on the arithmetic test will either be 50 points or 0 points. 50 points are awarded to students who answer all ten questions correctly. If any answer is incorrect, the score for the entire test is 0 points. Students who have a score of 0 may re-take the test. Once the student answers all ten questions correctly, the score for the test will be 50 points. Test must be taken before Oct 9th or the grade will be a 0.
- Class Participation……50 points
  - Class participation is based on regular attendance, punctuality, and participation in class discussion. After the **second** absence from class, 5 points will be deducted for each **additional** absence, tardy (more than 15 minutes), and/or obvious lack of participation in class.
- **TOTAL POINTS: ……700 points**

Grading Scale: Your final grade for this course will be based on the following:

A = 630 – 700
B = 560 – 629
C = 490 – 559

D = 420 – 489
F = <420 Points

Expectations:

- Check Blackboard regularly for assignments, announcements, grades, changes.
- **Communicate** with your course instructor for any concerns that could affect your learning, attendance, and participation in class.
- Observe regular attendance; prepare to actively participate in class by completing all reading assignments and practice exercises before coming to class.
- Engage in team collaboration and active listening.
- Engage in thoughtful reflections on learning opportunities.

Tardies

If a student is fifteen or more minutes late to class or leaves class fifteen minutes or more before class is over, an absence will be recorded. A student who shows a pattern of being a few minutes late (but less than 15) will be notified that continuation of that pattern will result in an absence.

IF YOU KNOW YOU WILL BE ABSENT:

- Notify me via email or phone call prior to, or on the day of the absence;
- Send your homework via email before class starts, you may take a picture or scan your homework and bring the hard copy to the next class meeting.
- Contact a student in the class in order to find out what work was completed in class and what homework is required of you for the next class meeting;
- Designate a student to collect handouts or materials received in class during your absence;
- Complete the assignments that are due and bring them to the next class meeting so you will stay current with the assignments. Any missed in-class group work **may not be made up**.

ADDITIONAL INFORMATION

Classroom Rules of Conduct

Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. **Cellular telephones and pagers must be turned off before class begins.** Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distractions. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

Use of Telephones and Text Messaging Devices in Academic Classrooms and Facilities

The use by students of electronic devices that perform the function of a telephone or text messenger during class-time may be prohibited if deemed disruptive by the instructor to the conduct of the class. Arrangements for handling potential emergency situations may be granted at the discretion of the instructor. Failure to comply with the instructor's policy could result in expulsion from the classroom or with multiple offenses, failure of the course. Any use of a telephone or text messaging devise or any other device that performs these functions during a test period will result in a zero for that test. Even the visible presence of such a device during the test period will result in a zero for that test. Use of these

devices during a test is considered de facto evidence of cheating and could result in a charge of academic dishonesty.
See student code of conduct http://www.shsu.edu/students/guide/StudentGuidelines2010-2010.pdf#page=29.

STUDENTS WITH DISABILITIES POLICY:

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see: http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf

Visitors in the Classroom

Unannounced visitors to class must present a current official SHSU identification card to be permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in the classroom.

Student Absences on Religious Holy Days Policy

Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence. University policy 861001 provides the procedures to be followed by the student and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). The instructor will provide the student with a written description of the deadline for the completion of missed assignments and/or tests.

Academic Dishonesty Policy

1. GENERAL

The subject of academic honesty is addressed in paragraph 5.3, Chapter VI, of the *Rules and Regulations*, Board of Regents, The Texas State University System, and Sam Houston State University *Student Guidelines* published by the Office of Student Life.

5.3 Academic Honesty. The University expects all students to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action.

5.31 The University and its official representatives, acting in accordance with Subsection

5.32 may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating, plagiarism, collusion, and the abuse of resource materials.

"Cheating" includes the following and similar actions:

(1) Copying from another student's test paper, laboratory report, other report, or computer files, data listings, and/or programs.
(2) Using, during a test, materials not authorized by the person giving the test.
(3) Collaborating, without authorization, with another student during an examination or in preparing academic work.
(4) Knowingly, and without authorization, using, buying, selling, stealing, transporting, soliciting, copying, or possessing, in whole or in part, the contents of an unadministered test.
(5) Substituting for another student, permitting any other person, or otherwise assisting any other person to substitute for oneself or for another student in the taking of an examination or test or the preparation of academic work to be submitted for academic credit.
(6) Bribing another person to obtain an unadministered test or information about an unadministered test.
(7) Purchasing, or otherwise acquiring and submitting as one's own work any research paper or other writing assignment prepared by an individual or firm. This section does not apply to the typing of the rough and/or final versions of an assignment by a professional typist.
5.32 "Plagiarism" means the appropriation and the unacknowledged incorporation of another's work or idea into one's own work offered for credit.
5.33 "Collusion" means the unauthorized collaboration with another person in preparing work offered for credit.

5.34 "Abuse of resource materials" means the mutilation, destruction, concealment, theft or alteration of materials provided to assist students in the mastery of course materials.

5.35 “Academic work” means the preparation of an essay, dissertation, thesis, report, problem, assignment, or other project that the student submits as a course requirement or for a grade.

2. PROCEDURES IN CASES OF ALLEGED ACADEMIC DISHONESTY

2.01 Procedures for discipline due to academic dishonesty shall be the same as in disciplinary actions specified in The Texas State University System *Rules and Regulations* and Sam Houston State University *Student Guidelines* except that all academic dishonesty actions shall be first considered and reviewed by the faculty member teaching the class. The faculty member may impose failure or reduction of a grade in a test or the course, and/or performing additional academic work not required of other students in the course. If the faculty member believes that additional disciplinary action is necessary, as in the case of flagrant or repeated violations, the case may be referred to the Dean of Student Life or a designated appointee for further action. If the student involved does not

accept the decision of the faculty member, the student may appeal to the chair of the appropriate academic department/school, seeking reversal of the faculty member's decision.
2.02 If the student does not accept the decision of the chair of the academic department/school, he/she may appeal to the appropriate academic dean. The chair of the academic department/school may also refer the case directly to the academic dean if the case so warrants.

PLEASE REFER TO THE TENTATIVE CALENDAR POSTED ON BLACKBOARD FOR INFORMATION ON COURSE TOPICS, EXAM DATES, AND DUE DATES FOR OTHER MAJOR ASSESSMENTS.