

Spring 2018 Course Syllabus Math 3381.01: Foundations of Mathematics for Elementary Teachers III

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Teaching Schedule:

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Monday/Wednesday:	Math 3381 (Section 5): 4:30 – 5:50 PM; The Woodlands Center Room 235
<u>Tuesday/Thursday</u> :	Math 1385 (Section 5): 12:30 – 1:50 PM; LDB 431
	Math 1385 (Section 12): 2:00 – 3:20 PM; LDB 216
	Math 1385 (Section 7): 3:30 – 4:50 PM; LDB 431

Office Hours:

<u>Monday/Wednesday</u>: 3:20 – 4:20 PM @ The Woodlands Center; 310 <u>Tuesday/Thursday</u>: 11- 12 LDB 413 **Additional Times Available By Appointment**

Course Description:

This course is the third in a series of courses designed to develop the necessary foundations in mathematics for prospective elementary teachers. Students are expected to practice communications 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, problem solving, discrete mathematics, probability, and data analysis. Throughout the course, the four main themes recommended by the NCTM Principles and Standards (problem solving, reasoning, communication and connections) will be emphasized. Students will also participate in class discussions and group work during this course. Prerequisite: MTH 1385 with a grade of C or better. 3 semester hours.

Course Objectives:

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

- Demonstrate understanding of the four-step problem solving process.
- Set up and solve ratio, proportion, and percent problems.
- Solve mathematical problems using a variety of strategies and techniques, such as make a diagram, look for a pattern, eliminate possibilities, use logical reasoning, Venn diagrams, and guess and check.
- Solve interest and growth problems using recursion techniques.
- Use multiple representations including equations, tables, visual patterns, and graphs to describe linear functions.
- Develop understanding of rate of change as related to linear, quadratic and exponential functions.
- Solve probability problems involving simple and compound events, using a variety of mathematical manipulatives.
- Apply theoretical and experimental probability techniques while solving problems.
- Solve combinatorics problems, using a variety of counting techniques.
- Construct and interpret different types of graphs, including bar graphs, line graphs, pie charts, stem and leaf plots, box and whisker plots, and scatter plots.

- Understand the difference between correlation and causation.
- Calculate and apply measures of central tendency, such as mean, median, and mode.
- Calculate and apply measures of variation, such as range, interquartile range, and standard deviation.
- Use the normal distribution to solve problems related to education.

Required Textbook:

Sowder, J., Sowder, L., & Nickerson, S. (2017). *Reconceptualizing mathematics for elementary school teachers, 3rd Edition*. 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.

Calculator:

• A scientific (with Statistics capabilities) or graphing calculator: Highly Recommended

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 under the Activities & Assignment Tab.

EVALUATION PROCEDURES AND GRADING POLICIES

Your final course grade for Math 3381 will be based on the following criteria. Please take time to familiarize yourself with the details of these assessments.

Course Assessments:

- - **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.
- Homework/Online Quizzes.....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.
- Problem of The Week.....50 points
 - You will be given a non-routine problem to solve periodically during the course of the semester. These problems will usually be assigned on a Monday and due on the

following Monday and will include an extensive right-up. Each problem will be worth 10 points. The top 5 scores will be used in this category.

- Final Exam (Comprehensive).....150 points
 - Your final exam grade (percentage) may be used to replace your lowest test grade provided you have not missed more than 2 classes during the semester. Students with more than two absences will not be eligible regardless of the reason for their absences.
- TOTAL POINTS:600 points

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

A = 540- 600 B = 480 - 539 C = 420 - 479 D = 360 - 419 F = <359 Points

Expectations:

- 4 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.
- **4** 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;
- 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.

STUDENT SYLLABUS GUIDELINES

You may find online a more detailed description of the following policies. These guidelines will also provide you with a link to the specific university policy or procedure:

http://www.shsu.edu/dept/academic-affairs/aps/aps-students.html

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. <u>Cellular telephones and pagers must be turned off</u> <u>before class begins.</u> 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 classtime 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 <u>http://www.shsu.edu/students/guide/StudentGuidelines2010-2010.pdf#page=29</u>.

Americans with Disabilities Act

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 may affect their academic performance should register with the Office of Services for Students with Disabilities in the Lee Drain Annex (telephone: 936-294-3512; TTD: 938-294-3786, and e-mail <u>disability@shsu.edu</u>). 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 SHSU Services for Students with Disabilities. For a complete listing of the university policy, see http://www.shsu.edu/dept/academic-affairs/aps/aps-students.html

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.

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