Class time: Monday/Wednesday, 9:30 – 10:50 AM, Room 403, Lee Drain Building
Instructor: Dr. Bill Jasper
Office location: Lee Drain Building, Room 439A
Instructor contact information: Phone 294-1575, FAX: 936-294-1882, Email: jasper@shsu.edu
Office Hours: Mon./Wed., 8:30 - 9:30 AM and 11-AM – 12 noon, Room 439A,
          Tues./Thurs., 9:30 – 11 AM, Room 439A
          Appointments by special arrangement

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.
-   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.
-   Set up and solve ratio, proportion, and percent problems.
-   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 AND MATERIALS:

We will be using a textbook – See below. It is the same book that we used for Math 1384 in the Fall, 2017. All sections of MATH 1384, 1385, and 3381 will use the new third edition. There is a paperback book - three-hole punched for easy use of sections needed for your particular course **OR** you can purchase the hard back edition.   It will be used for reading, in-class activities and for HW assignments sometimes during the course. I don't plan to use it too much for the early parts of the course, but will use supplemental materials.

Reconceptualizing Mathematics for Elementary School Teachers by Sowder, Sowder, and Nickerson (2017 – third edition), published by Freeman,   ISBN: 978-1-4641-93330.   **A graphing calculator or scientific calculator (TI-30XII is best) is needed for this course.** Talk to me before you buy one.

ATTENDANCE POLICY:

Regular and punctual attendance is expected of every student. As a prospective teacher, you must demonstrate your reliability and conscientious attitude by your faithful attendance. **Students who miss more than two classes during the semester will be assessed a point penalty (up to 50 points for severe attendance problems) toward their course grade**. Three tardies count as an absence. If absent, you are still responsible for all material covered in class, and you will need to check with a classmate about what was discussed, obtain handouts and homework assignments. Serious health or family problems that are well documented will be handled individually. However, if you are unable to attend class regularly, then you should drop the course. In addition to attending class faithfully, students are expected to put forth their best effort in this class. If you do not participate in class discussions, are sleeping or texting in class, or are talking when I am talking or when a classmate is talking, you are not demonstrating the professional attitude required to be a teacher.   Point penalties will be assessed for any problems in this area. Up to 25 points are designated for professionalism, and you must be "near perfect" to earn all of these points.

ASSIGNMENTS:

Homework, class work or mini-projects will be normally be assigned for every class day, and may be collected for a grade at the instructor's prerogative. Homework assignments should be accomplished in a thorough manner, regardless whether they are to be collected for a grade or not. To earn maximum points, all problems must be attempted and all work must be shown. Homework assignments are due at the beginning of class. Even if you are absent, the assignment is still due on the announced date. You may fax or scan or take a picture of an assignment to send to me on the due date, or have a classmate turn it in at the regular class period.

EXAMS:

There will be three exams during this semester, as well as a comprehensive final exam. No exams will be dropped or replaced. Unless approved by the instructor prior to the date of a test, there will be no make-up for a missed test. If a student misses a test, then the final exam will count double. A missed final examination can be made up only by approval of the Dean of the College of Sciences or a higher administrative official.

GRADING PLAN:

Each student's grade for this course will be based on the number of points earned out of 500 total points, as listed below:

A = 450 points or more   B = 400 - 449 pts   C = 350 - 399 pts   D = 300 - 349 pts   F = below 300 pts

Grades will be assigned for the following areas:

Three exams, weighted 100 points each

Homework and projects – 50-60 points

Class participation, attendance, professionalism – 40-50 points

Comprehensive final exam - 100 points

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/syllabus/

Academic Dishonesty: Students are expected to maintain 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. Academic dishonesty includes, but is not limited to, cheating on examinations or other work, plagiarism, collusion, and the abuse of resource materials. *See Student Syllabus Guidelines*.

Classroom Rules of Conduct: Students are expected to assist in maintaining a classroom environment that is conducive to learning. Students are to treat faculty and students with respect. Students may tape record lectures provided they do not disturb other students in the process.

Use of Telephones and Text Messagers in Academic Classrooms and Facilities: The use by students of electronic devices that perform the function of a telephone or text messager 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 messager or any device that performs these functions during a test period is prohibited. These devices should not be present during a test or should be stored securely in such a way that they cannot be seen or used by the student. 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/StudentGuidelines2010-2012.pdf#page=29).

Student Absences on Religious Holy Days: Students are allowed to miss class and other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. Students remain responsible for all work. *See Student Syllabus Guidelines*.

Visitors in the Classroom: Only registered students may attend class. Exceptions can be made on a case-by-case basis by the professor. In all cases, visitors must not present a disruption to the class by their attendance. Students wishing to audit a class must apply to do so through the Registrar's Office.

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

The Sam Houston Writing Center, located in Farrington 111, is open from 8 a.m. until 7 p.m. Monday through Thursday, 8 a.m. until 3 p.m. on Friday, and 2 - 7 p.m. on Sunday. Writing tutors will work with you at any stage of the writing process (brainstorming, generating a draft, organizing a draft, or revising a draft) for any written assignment. The Writing Center operates on an appointment system, so please call (936) 294-3680 to schedule a session with a writing tutor. Skype sessions are available for distance students, and a tutor is available at the University Center. See website for more information: www.shsu.edu/wctr.

MATH 3381 COURSE SCHEDULE (TENTATIVE)

WEEK OF	TOPIC	READINGS
Jan 17	Introduction, standards, problem-solving Process	
Jan 23	Diagrams Systematic Lists	Chapter 1 Supplemental materials
Jan 30	Systematic counting Eliminate possibilities	Supplemental materials
Feb 6	Logic Puzzles Guess & check	Supplemental materials Supplemental materials
Feb 13	Patterns **Exam #1, Feb 14** **SERA Feb 15th**	Supplemental materials
Feb 20	Proportional reasoning/Percents Algebraic patterns	Chapter 9 Chapter 12, Supplemental materials
Feb 27	Recursion Algebraic reasoning	Supplemental materials Chapter 12, 13
Mar 6	Algebraic reasoning **Exam #2, Mar 7**	Chapter 12, 13, 14
Mar 12-16	Spring Break	
Mar 20	Fundamentals of probability	Chapter 27, 28
Mar 27	Theoretical/experimental probability	Chapter 27, 28
Apr 3	Probability/counting problems	Chapter 28, 33
Apr 6	Last date to Q drop	
Apr 10	Probability/counting problems **Exam #3 (Apr 11)**	Chapter 28, 33
Apr 17	Intro to Statistics and Data	Chapter 29
Apr 24	Graphs, Central tendency	Chapter 29, 30
May 1	Variation, Distributions	Chapter 30, 32

Final Exam: Wednesday. May 9, 9:30 – 11:30 AM