Math 3332 - B

Elementary Statistical Methods for Economics and Business

Instructor: Ali Najm
Office: Math House 214
Phone: 713.525.3855
Email: najma@stthom.edu

Office Hours:   MW 1:30PM – 2:30PM
               TTH 11:00AM – 1:00PM

Term and year: Spring 2018

Class Days and Times: TTH 2:10PM – 3:25PM

Location: Strake # 206


Student learning objectives:

- Introduce definitions of statistical terms, types of data, techniques for describing and analyzing data, methods of estimation, testing hypotheses and modeling data.
- Improve critical thinking and problem-solving skills by focusing on applying statistical techniques and concepts learned to visualize, analyze, and understand data from practical real-world problems.
- Practice using common computer software (Microsoft Excel, Google Sheet, Numbers...) for basic statistical calculations and data management.
- Develop an understanding of measures of central tendency: mean, median, mode, and measures of dispersion: variance and standard deviation.
- Understand the use of various probability distributions. (Binomial, Normal...)

Grade Determination:
Grades will be based on class participation and activities, homework, two semester tests and a comprehensive final exam.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Activities and Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Test 1</td>
<td>25%</td>
</tr>
<tr>
<td>Test 2</td>
<td>25%</td>
</tr>
<tr>
<td>Final</td>
<td>30%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Class Participation: Attendance in class is mandatory. Emergencies happen, so all students will be given 2 excused absences for personal issues. Excessive absences beyond that will be excused ONLY for documented extreme circumstances. However, students who are not able to attend class often cannot finish successfully, so it is a student’s responsibility to drop the course before the deadline if they are unable to complete the course.

Homework and Classroom Activities: Homework will be assigned weekly and should be written up completely. It will be due at the beginning of class in the following week. Classroom activities will include quizzes. Quizzes may or may not be announced ahead of time and they are connected to the homework due that day, others will be participation in the daily interactive learning. There will be no makeups for activities.

Attendance: Attendance is mandatory and will be recorded daily.

Calculators: You may use any calculator on homework and exams for which a calculator is allowed. You will need one that does exponents and basic probability functions. A non-graphing scientific calculator is sufficient.

Exams: Exams will be in class on the date announced. There are no make-up exams; however your grade on the final will replace a missed test grade. There will be a review session prior to each exam. Final exam is comprehensive and will be given on the date specified in the spring semester final exam schedule. Calculators will be permitted on exams.
Grading Scale:
93-100 A
90-92.9 A-
87-89.9 B+
83-86.9 B
80-82.9 B-
77-79.9 C+
73-76.9 C
70-72.9 C-
67-69.9 D+
60-66.9 D
<60 F

Accommodations:
The University of St. Thomas provides reasonable accommodations to students who request academic accommodation due to a disability that imposes impairment in the learning environment. Disabilities may be defined by the following:

• Learning disabilities
• Health impairments
• Physical limitations
• Psychiatric conditions

The University abides by the Americans with Disabilities Act of 1990 (ADA) and the ADA Amendments Act of 2008 (ADAAA), Section 504 of the Rehabilitation Act of 1973 and other legal mandates. To receive accommodations students must provide information to validate that a disability exists. Each student’s situation is individually assessed and reviewed.

For more information, please contact the Counseling & Disability Service office.

Blackboard Recourses:
You may find the login for blackboard on your My StThom page. Use your CELT login ID and password to access blackboard. Course syllabus, calendar, reminders and announcements will be found in Blackboard.

Academic Honesty:
Ethical conduct is essential to a community of scholars and students searching for truth. Anything less than total commitment to honesty and honorable conduct undermines the efforts of the entire community. Academic integrity lies at the very heart of any institution of higher learning. Students and faculty are expected to commit to a code that exemplifies each individual's honor and integrity. Any conduct that violates this standard and betrays the respect of others is a matter of grave concern and, accordingly, is deemed unacceptable.

Classroom Conduct Policy:
No disruptive behaviors. Technologies are allowed as long as they are not distracting or interfering with another student's learning. Be kind and respectful to each other.

Instructional Outline:

1. Introduction to Statistics
   1.1 Statistical and Critical Thinking
   1.2 Types of Data
   1.3 Collecting Sample Data

2. Exploring Data With Tables And Graphs
   2.1 Frequency Distributions for Organizing and Summarizing Data
   2.2 Histograms
   2.3 Graphs

3. Describing, Exploring, and Comparing Data
   3.1 Measures of Center
   3.2 Measures of Variation
   3.3 Measures of Relative Standing and Boxplots

TEST I

4. Probability
   4.1 Basic Concepts of Probability
   4.2 Addition Rule and Multiplication Rule

5. Discrete Probability Distribution
   5.1 Probability Distributions
   5.2 Binomial Probability Distributions

6. Normal Probability Distribution
   6.1 The Standard Normal Distribution
   6.2 Applications of Normal Distributions
   6.3 Sampling Distributions and Estimators
6.4 The Central Limit Theorem

**TEST 2**

7. Estimating Parameters and Determining Sample Sizes
   7.1 Estimating a Population Proportion
   7.2 Estimating a Population Mean
   7.3 Estimating a Population Standard Deviation or Variance

8. Hypothesis Testing
   8.1 Basics of Hypothesis Testing
   8.2 Testing a Claim About a Proportion
   8.3 Testing a Claim About a Mean
   8.4 Testing a Claim About a Standard Deviation or Variance

9. Inferences from Two Samples
   9.2 Two Proportions
   9.3 Two Means: Independent Samples
   9.4 Two Means: Dependent Samples
   9.5 Two Variances or Standard Deviations

10. Correlation and Regression
    10.1 Correlation
    10.2 Regression

Final Exam.

**Important Dates:**
- Feb 2: Last day to drop the course without academic penalty.
- Feb 15 – TEST 1
- March 22 – TEST 2
- April 2: Last day to drop the course and receive W (Withdraw)
- Final Exam – May 7 - 15