**Introduction to Probability and Statistics**  
MTH 220.007 Fall 2018

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**Department:** Mathematics and Statistics  
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**Office:** Math 339

**Office Hours:**  
Monday: 9 to 10  
Tuesday: 3:15 to 4:15  
Wednesday: 9 to 10 and 1 to 2:30  
Thursday: 3:15 to 4:15  
Friday: 9 to 10  
Other times available by appointment

**Class meeting time and place:** Monday, Wednesday. Friday from 10 am to 10:50 am in Math 216

**Course Description:**  
Probability essential for statistics, random variables, mean and variance, binomial distribution, normal distribution, t distribution, descriptive statistics, process of statistical inference, confidence intervals, hypothesis testing and linear regression

**Required Materials:**  
**Textbook bundle:** *Introductory Statistics* (custom published) by Neil A. Weiss  
This package includes required access to My Stat Lab (online homework). You can also purchase the online access from My Stat Lab. When you purchase the online access through My Stat Lab, you will not have a physical textbook but you will have online access to the textbook.

**Calculator:** A scientific calculator is required. Graphing calculators are permitted, but not required. You must bring your calculator to class daily. **You are not allowed to use your phone as a calculator.** The use of phones, computers, and tablets in class is prohibited.

**Remind Text Messages:** Please join the Remind group for this course by texting @busbee22 to 81010. This will allow me to send you text reminders for assignments and for you to be able to send questions through this system as opposed to email. (*Please let me know if you are unable to sign up for these messages. Signing up will be counted as your first grade of the semester.*)

**Other Supplies:** A binder, dividers, pens, pencils, paper and/or a spiral. You will also need to print out case studies and worksheets from D2L throughout the semester and bring them with you to class. You must keep up with the case study manual as we work thorough it.

**Grading Policy:**

**Grade Breakdown**  
The final course grade will be computed using the following weights:  
- Midterm Exam [CO 1, 2, 3] 20%  
- MyStatLab Assignments [CO 1, 2, 3] 10%  
- Projects [CO 1, 2, 3] 15%  
- Quizzes [CO 1, 2, 3] 30%  
- Comprehensive Final Exam [CO 1, 2, 3] 25%

**Exams**  
There are **no** make-ups for missed exams. Department policy requires that you bring and be recognizable from either your SFASU Student ID or another valid photo ID before you are permitted to take each exam. You are responsible for all formulas in the course. The final exam is comprehensive and mandatory. You must have a complete understanding of the course material in order to pass the final exam.

**MyStatLab**  
Online homework will be required using My Stat Lab at www.mystatlab.com. When you create an account, use the following course ID: **busbee11547**  
There are complete instructions at the end of the syllabus. You need to get your account setup as soon as possible. **It is your responsibility to keep up with all due dates.** My advice is to check MyStatLab daily. It is extremely important to keep up with the homework on MyStatLab. Due dates
on MyStatLab will not be extended. There are several computer labs on campus including at the library for you to use if you have computer problems. At the end of the semester I will drop your 3 lowest homework grades. There will also be suggested from the textbook for practice for some material during the semester.

Projects
To have successful projects, it is crucial to understand the material as we go through the semester. You will receive detailed project instructions later on in the semester.

Quizzes
There are no make-ups for missed quizzes. If you are late to class, you will not be permitted to take the quiz. You will receive a zero on the quiz if you are absent, late, leave early, are disruptive in any way, use your phone in class that day, or any other way to be marked absent (see attendance policy). I will drop two quiz grades at the end of the semester. Quizzes can be announced or unannounced. You need to keep up with the material and come to class prepared each day to take a quiz. Quizzes can be in any form I see appropriate.

Resurrection Policy: This resurrection policy is only used for students with three or fewer absences throughout the semester. Your final exam score can replace your lowest exam score. Please see the attendance policy for all ways to be marked absent.

Attendance Policy: Attendance is expected. You are responsible for any notes and assignments that you miss. Roll is taken each class period. You will be marked absent if any of the following happen: you are absent, you are significantly late, you leave class early, or you are disruptive in any way. Your phone and other electronics must be silenced and in your backpack. On your table you should have your course materials, calculator, and supplies needed to take notes.

*My advice to you:
- The case study manual is very important. This manual and your notes are the most important pieces of material for this course. Take good notes and read back through them often and do not neglect the reading of the case study manual.
- Statistics is not your typical math course. You will learn a lot of new things this semester. It will be good though! Don't let too much time pass if you do not understand something. Make sure to ask a question anytime you are confused and/or need clarification. If you don't get time to ask your question in class, PLEASE come by my office.

D2L: Course materials will be located on D2L. It is your responsibility to check D2L daily. You will use your MySFA username and password on the website www.D2L.sfasu.edu. You are responsible for everything that is posted on D2L for this course.

AARC Tutoring: The AARC (Academic Assistance and Resource Center) in the Steen Library has free help available! They can be reached at 468-4108, or the website http://library.sfasu.edu/aarc/. The AARC has learning teams and walk in tables.
- The first open enrollment for learning teams will be in the AARC on August 29th and August 30th from 11 am – 6 pm. You must go in person to the AARC to sign up for a learning team. I HIGHLY recommend signing up for a learning team.
- The hours for the math walk in tables at the AARC:
  - Sundays: 4 pm – 8 pm
  - Mondays-Thursdays: 1 pm – 8 pm
**For every hour spent in class, you should expect to put in at least two hours of work outside of class studying and/or doing homework and other assignments.**

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### Tentative MTH 220 Schedule – Fall 2018

<table>
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<tr>
<th>Week #</th>
<th>Week Starting on:</th>
<th>Material Covered and Exam Schedule</th>
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| 1      | August 27<sup>th</sup> | Course Introduction  
Introduction to Statistics |
| 2      | September 3<sup>rd</sup> | Case Study 1A |
| 3      | September 10<sup>th</sup> | Case Study 1A |
| 4      | September 17<sup>th</sup> | Case Study 1B |
| 5      | September 24<sup>th</sup> | Case Study 1B |
| 6      | October 1<sup>st</sup> | Finish Case Study 1B  
**Project 1 Due** |
| 7      | October 8<sup>th</sup> | **Midterm Exam: Monday, October 8<sup>th</sup>**  
Start Case Study 2A |
| 8      | October 15<sup>th</sup> | Case Study 2A |
| 9      | October 22<sup>nd</sup> | Case Study 2A  
Case Study 2B |
| 10     | October 29<sup>th</sup> | Case Study 2B |
| 11     | November 5<sup>th</sup> | Case Study 2B  
Case Study 3A |
| 12     | November 12<sup>th</sup> | Case Study 3A |
|        | November 19<sup>th</sup> | **Thanksgiving Break** |
| 13     | November 26<sup>th</sup> | Case Study 4A |
| 14     | December 3<sup>rd</sup> | **Project 2 Due** |
| 15     | December 10<sup>th</sup> | **Final Exam: Wednesday, December 12<sup>th</sup> 10:30 am – 12:30 pm** |
Student Registration Instructions

To register for MTH 220.007 F18:

2. Under Register, select Student.
3. Confirm you have the information needed, then select OK! Register now.
4. Enter your instructor’s course ID: busbee11547, and Continue.
5. Enter your existing Pearson account username and password to Sign In.
   You have an account if you have ever used a MyLab or Mastering product.
   » If you don’t have an account, select Create and complete the required fields.
6. Select an access option.
   » Enter the access code that came with your textbook or that you purchased
     separately from the bookstore.
   » If available for your course,
     • Buy access using a credit card or PayPal.
     • Get temporary access.
7. From the You’re Done! page, select Go To My Courses.
8. On the My Courses page, select the course name MTH 220.007 F18 to start your work.

To sign in later:

2. Select Sign In.
3. Enter your Pearson account username and password, and Sign In.
4. Select the course name MTH 220.007 F18 to start your work.

To upgrade temporary access to full access:

2. Select Sign In.
3. Enter your Pearson account username and password, and Sign In.
4. Select Upgrade access for MTH 220.007 F18.
5. Enter an access code or buy access with a credit card or PayPal.
Course Calendar / Outline:

- Descriptive Statistics [CO 1, 2, 3]
  - Graphical Display of Data
  - Measures of location
  - Measures of Dispersion
- Probability [CO 1, 2, 3]
  - Classical Probability
  - Probability Laws (Rules)
  - Counting Techniques
- Probability Distributions [CO 1, 2, 3]
  - Random Variables
  - Discrete Distributions
    - Binomial Distribution
  - Continuous Distributions
    - Normal Distribution
- Sampling Distributions [CO 1, 2, 3]
  - Random Samples
  - Central Limit Theorem
- Statistical Inference [CO 1, 2, 3]
  - Estimation
    - Point Estimation
    - Interval Estimation
  - Hypothesis Testing
- Linear Regression [CO 1, 2, 3]

Approximate time spent

10%
20%
20%
10%
30%
5%

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 limits and continuity, derivatives and antiderivatives, applications of derivatives and definite integration. 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.

University Policies:

Academic Integrity (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.

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](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.
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/.

Program Learning Outcomes:
This is a general education core curriculum course and no specific program learning outcomes for this major are addressed in this course.

Student Learning Outcomes (SLO): At the end of MTH 220, a student who has studied and learned the material should be able to:
1. Exhibit an understanding of basic probability rules and concepts [CO:1,3]
2. Demonstrate an understanding of different probability models and ways they are used in statistical inference. [CO: 1, 2, 3]
3. Demonstrate an understanding of point estimation of population parameters. [PLO: 1,3]
4. Demonstrate an understanding of interval estimation about population parameters and inference that can be drawn from such techniques. [CO: 1,3]
5. Demonstrate an understanding of hypothesis testing concerning population parameters and inference that can be drawn from such techniques. [CO:1,3]

General Education Core Curriculum
The Texas Higher Education Coordinating Board has identified six core learning objectives: Critical Thinking Skills, Communication Skills, Empirical and Quantitative Skills, Teamwork, Personal Responsibility, and Social Responsibility. SFA is committed to the improvement of its general education core curriculum by regular assessment of student performance on these six objectives.

The chart below indicates the core objectives addressed by this course/ No core objectives are being assessed in MTH 220 this semester.

<table>
<thead>
<tr>
<th>Core Objective</th>
<th>Definition</th>
<th>Course Assignment Title</th>
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<tbody>
<tr>
<td>Critical Thinking Skills</td>
<td>To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.</td>
<td>Not assessed this semester</td>
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<tr>
<td>Communication Skills</td>
<td>To include effective development, interpretation and expression of ideas through written, oral, and visual communication.</td>
<td>Not assessed this semester</td>
</tr>
<tr>
<td>Empirical and Quantitative Skills</td>
<td>To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.</td>
<td>Not assessed this semester</td>
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