MTH 220: Introduction to Probability and Statistics  
MTH 220.016, Spring 2018

Name: Mrs. Sullivan  
Department: Mathematics and Statistics  
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Phone: 936-468-1777  
Office: Math 343

Office Hours: Mondays, Wednesdays, and Fridays: 11 am – 11:50 am  
Tuesdays and Thursdays: 11 am – 12:15 pm

Class meeting time and place: Mondays, Wednesdays, and Fridays: 12 pm – 12:50 pm in Math 357

Course Topics: 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

Objectives and Outcomes: A complete list of program learning objectives, general education core curriculum objectives/outcomes and other course information can be found using the following link:  
http://www2.sfasu.edu/math/courses/syllabi/MTH220Syllabus.pdf

Required Materials:  
Textbook bundle: Introductory Statistics (custom published) by Neil A. Weiss  
This package includes required access to My Stat Lab (online homework)

Calculator: A scientific calculator is required. Graphing calculators are permitted, but not required. I will be using the TI-30XS Multiview. 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.

Other Supplies: A 2" binder (at least 2"), dividers, different colored highlighters, 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] 25%  
MyStatLab Assignments [CO 1, 2, 3] 10%  
Projects [CO 1, 2, 3] 20%  
Quizzes [CO 1, 2, 3] 20%  
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: sullivan51081  
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 below). 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.

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. The final exam score can only replace ONE exam score and it cannot replace any other score. A student will be marked absent if they are absent, leave class early, arrive significantly late, disruptive in any way, on cell phone or other electronic devices or off task.

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, you are disruptive in any way.

Tips for a Successful Math Class:
- Take the time to read the cases and review your notes before and after class.
- Treat mistakes as a learning experience. Realize that math is hard. Some parts are harder for some people than others.
- Some people take longer to understand things than others. Evaluate how you study and seek to study smarter, not necessarily longer. If you are still stuck, get some help. The AARC and I are here for you!
- You MUST stay organized in this course.
- You must stay organized in this course.
- You need to go into this semester with an open mind and you must be willing to put in time to learn something new. It’s going to feel so good!

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.

Tutoring: The AARC (Academic Assistance and Resource Center) in the Steen Library has free tutoring available! They can be reached at 468 - 4108, or the website http://library.sfasu.edu/aarc/. The AARC also has walk in tables and other resources available.

Miscellaneous:
- When it is outside of office hours, it is best to contact me through email and not through the phone. If you ever email me during a school day and you do not get a response within 24 hours, then I did not get the email and you need to resend it. I like to respond as quickly as I can to your emails so that you do not fall behind. My email address is SullivanRK@sfasu.edu
- You need to come to class prepared each day with your pencil, paper, calculator, case study manual, and any other things I have asked you to bring for that day.
- You should keep your phone put away. It should not be on the desk or in your lap. You need to stay focused during the entire class period.
General Education Core Curriculum

Core Objectives (CO):
1. **Critical Thinking** [CO 1]: to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. **Communication Skills** [CO 2]: to include effective development, interpretation and expression of ideas through written, oral and visual communication
3. **Empirical and Quantitative Skills** [CO 3]: to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

This course has been selected to be part of Stephen F. Austin State University's core curriculum. The Texas Higher Education Coordinating Board has identified six objectives for all core courses: 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.

<table>
<thead>
<tr>
<th>Core Objective</th>
<th>Definition</th>
<th>Course Assignment Title</th>
</tr>
</thead>
<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>
</tr>
<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>
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<td>Empirical and Quantitative Skills</td>
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<td>Not assessed this semester</td>
</tr>
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**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
    - Hypergeometric Distribution
  - Continuous Distributions
    - Uniform Distribution
    - 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]

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.
**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]

**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. The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

**Academic Integrity (Policy 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.

The penalty for a student found cheating on any part of an assignment, quiz, or exam in this class will range from a grade of zero on the work to a grade of F in the course, and may result in additional, more severe disciplinary measures. A student who allows another to copy his work and the student copying the work are both guilty of cheating. Do your own work. Do not show your completed work to others. Do not allow others to copy your work. 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.

**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.

**Acceptable Student Behavior**
Classroom behavior should not interfere with the instructor's ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1 http://www.sfasu.edu/policies/student_conduct_code.asp). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.
# Tentative MTH 220 Schedule – Spring 2018

<table>
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<tr>
<th>Week #</th>
<th>Week of</th>
<th>Material Covered and Exam Schedule</th>
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| 1      | January 15<sup>th</sup> | Course Introduction  
Introduction to Statistics                                               |
| 2      | January 22<sup>nd</sup>  | Introduction to Statistics                                            |
|        |                | Case Study 1A                                                          |
| 3      | January 29<sup>th</sup>  | Case Study 1A                                                          |
| 4      | February 5<sup>th</sup>  | Case Study 1B                                                          |
| 5      | February 12<sup>th</sup> | Case Study 1B                                                          |
| 6      | February 19<sup>th</sup> | Case Study 1B                                                          |
| 7      | February 26<sup>th</sup> | Proportion Project (Project 1 due)                                     |
| 8      | March 5<sup>th</sup>     | Midterm Exam: Monday, March 5<sup>th</sup>  
Case Study 2A                                                           |
|        |                | SPRING BREAK  
No Class March 12<sup>th</sup> – 16<sup>th</sup>                     |
| 9      | March 19<sup>th</sup>    | Case Study 2A                                                          |
| 10     | March 26<sup>th</sup>    | Case Study 2B                                                          |
|        |                | No Class March 29<sup>th</sup>-30<sup>th</sup>                         |
| 11     | April 2<sup>nd</sup>     | Case Study 2B                                                          |
| 12     | April 9<sup>th</sup>     | Case Study 3A                                                          |
| 13     | April 16<sup>th</sup>    | Case Study 3A                                                          |
| 14     | April 23<sup>rd</sup>    | Case Study 4A                                                          |
| 15     | April 30<sup>th</sup>    | Semester Project Presentations  
(Project 2 due)                                                         |
| 16     | May 7<sup>th</sup>       | Final Exam: See SFA’s website for final exam schedule  
http://www.sfasu.edu/registrar/194.asp                                  |
Student Registration Instructions

To register for MTH 220 Sullivan - Sections 3, 4, 16:

2. Under Register, select Student.
3. Confirm you have the information needed, then select OK! Register now.
4. Enter your instructor's course ID: sullivan51081, 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 Sullivan - Sections 3, 4, 16 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 Sullivan - Sections 3, 4, 16 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 Sullivan - Sections 3, 4, 16.
5. Enter an access code or buy access with a credit card or PayPal.