MTH 220: Introduction to Probability and Statistics
MTH 220, Fall 2018

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Phone: 936-468-3709
Office: Math 328

Office Hours: These hours have been set aside specifically to help students.

<table>
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<tr>
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<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
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<td>12-1</td>
<td>12:15-1:15</td>
<td>12-1 2:15-3:15</td>
<td>12:15-1:15</td>
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**Additional times are available by appointment**

Class meeting time and place: Section 013 – MW 1-2:15 pm – Math 357
Section 015 – TR 9:30-10:45 am – Math 357
Section 016 – TR 11-12:15 pm – Math 206

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 (recommended and cheaper). 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. I will be using the TI-Inspire. 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.

MyStatLab
Online homework will be required using My Stat Lab at www.mystatlab.com. When you create an account, use the following course ID: rotenberry96892
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 problems from the textbook for practice material during the semester.

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.
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. The final exam score can only replace ONE exam score and it cannot replace any other 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, you are disruptive in any way. Your phone and other electronics must be silenced and in your backpack. At your table you should have your course materials, calculator, and supplies needed to take notes.

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 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. I use the D2L newsfeed as an easy way to communicate with the class.

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

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.
- You need to come to class prepared each day with your pencil, paper, calculator, printed case study manual, and any other things I have asked you to bring for that day.
- You need to stay focused during the entire class period and ask questions as they come to you.
- In college, you will spend at least two hours working on and studying for a course for every one hour spent in class.
<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\(^{th}\) | Course Introduction

Introduction to Statistics |
| 2      | September 3\(^{rd}\) | Case Study 1A |
| 3      | September 10\(^{th}\) | Case Study 1A |
| 4      | September 17\(^{th}\) | Case Study 1B |
| 5      | September 24\(^{th}\) | Case Study 1B |
| 6      | October 1\(^{st}\) | Finish Case Study 1B

Project 1 Due |
| 7      | October 8\(^{th}\) | Midterm Exam: Monday, October 8\(^{th}\)

Start Case Study 2A |
| 8      | October 15\(^{th}\) | Case Study 2A |
| 9      | October 22\(^{nd}\) | Case Study 2A

Case Study 2B |
| 10     | October 29\(^{th}\) | Case Study 2B |
| 11     | November 5\(^{th}\) | Case Study 2B

Case Study 3A |
| 12     | November 12\(^{th}\) | Case Study 3A |
|        | November 19\(^{th}\) | Thanksgiving Break |
| 13     | November 26\(^{th}\) | Case Study 4A |
| 14     | December 3\(^{rd}\) | Project 2 Due |
| 15     | December 10\(^{th}\) | Final Exam:

Section 013 - Monday, December 10\(^{th}\) 1-3 pm

Section 015 - Tuesday, December 11\(^{th}\) 8-10 am

Section 016 - Thursday, December 13\(^{th}\) 10:30 am – 12:30 pm |
### 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
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>
</tr>
<tr>
<td>Communication Skills</td>
<td>To include effective development, interpretation and expression of ideas though written, oral, and visual communication.</td>
<td>Not assessed this semester</td>
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<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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Student Registration Instructions

To register for MTH 220:

2. Under Register, select Student.
3. Confirm you have the information needed, then select OK! Register now.
4. Enter your instructor’s course ID: rotenberry96892, 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 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 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.
5. Enter an access code or buy access with a credit card or PayPal.

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