Department of Mathematics and Statistics
Math 0199.070 and Math 1342.070—Introduction to Probability and Statistics
Fall 2021

Name: Mrs. Sullivan    Email: SullivanRK@sfasu.edu    Phone: 936-468-1777    Office: Math 343

Office Hours: Mondays and Wednesdays: 10:00 am – 10:50 am and 1 pm – 2:15 pm    Fridays: 10 am – 10:50 am
Office hours are held on Zoom. If you would like to meet in person, please email me.
Link to join office hours: https://sfasu.zoom.us/my/sullivanrk?pwd=ZXFRkptR0ZOVFkdTSkd0TFB6SThtdz09
Meeting ID: 526 704 8894    Password: 1342

Class Meeting Place and Time: Math Building Room 204
Mondays, Wednesdays, Fridays: 11 am – 11:50 am
Tuesdays and Thursdays: 11 am – 12:15 pm

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

Text and Materials:

Online Access to MyStatLab: You can gain the required access to MyStatLab by either purchasing the textbook bundle from the bookstore or by buying the online access from MyStatLab directly.

- Textbook bundle: *Introductory Statistics* (custom published) by Neil A. Weiss. This package includes required access to My Stat Lab (online homework). This bundle can be found at our bookstores.
- You can also purchase the online access from MyStatLab. When you purchase the online access through MyStatLab, you will not have a physical textbook but you will have online access to the textbook.
- The course is completely centered around the Case Study Manual which is located D2L. MyStatLab is where your online homework and practice is located. It is completely fine to not have a physical copy of the Weiss textbook.

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. I highly recommend having a calculator with a fraction button.

Other Supplies: A 2” binder (at least 2”), dividers, different colored highlighters, pencils, and loose-leaf paper. You will also need to have access to Excel throughout the semester. As a student, you are able to download Excel through your mySFA account.

Attendance Policy: You are required to attend class each day in person. Your phone and all other electronics must be silenced, in your backpack, and out of sight. At your table you should have only your course materials, calculator, and supplies needed to take notes.

AARC Tutoring: The AARC (Academic Assistance and Resource Center) in the Steen Library has free help available! The AARC is also available through Zoom. Please go to the following website to get up to date information about getting help through the AARC: http://www.sfasu.edu/aarc/tutoring

Grading Policy:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes [CO 1, 2, 3]</td>
<td>15%</td>
</tr>
<tr>
<td>MyStatLab Homework [CO 1, 2, 3]</td>
<td>15%</td>
</tr>
<tr>
<td>Exam 1 [CO 1, 2, 3]</td>
<td>10%</td>
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<tr>
<td>Exam 2 [CO 1, 2, 3]</td>
<td>20%</td>
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<tr>
<td>Exam 3 [CO 1, 2, 3]</td>
<td>20%</td>
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<tr>
<td>Final Exam [CO 1, 2, 3]</td>
<td>20%</td>
</tr>
</tbody>
</table>

Grading Scale:

- 90% - 100%: A
- 80% - 90%: B
- 70% - 80%: C
- 60% - 70%: D
- Below 60%: F
Course Requirements:

- **Exams**: Exams will be given during your scheduled class time in our regular classroom. There are no make-ups for missed exams. Department policy requires that you are recognizable from either your SFASU Student ID or another valid photo ID before you are permitted to take each exam. 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 MyStatLab at www.mystatlab.com. When you create an account, use the following course ID: sullivan72040. There are complete setup instructions at the end of the syllabus. You need to get your account setup today. 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. At the end of the semester, I will drop your 3 lowest MyStatLab grades. There is a late submission penalty policy on MyStatLab homework assignments. There is a 25% penalty for each day that the homework is late. MyStatLab does not work well with Safari. I use Google Chrome and Firefox. Once you are logged into MyStatLab, there is a menu bar on the left. Click on homework to see all available homework. If you see the “similar exercise” button, you can click on that button and MyStatLab will give you a fresh problem to attempt. You want to use the homework to gain confidence in the material.

- **Quizzes**: Quizzes will be given on a regular basis and can be in any format the instructor chooses. There will be no make-up quizzes, but a low quiz grade will be dropped at the end of the semester. You need to always stay ready for a quiz.

- **Daily Responsibilities**: Each day you need to reread your course notes, check MyStatLab, work on available homework, check D2L for any announcements and material, and to complete any assigned tasks. Please also check D2L before coming to class in case there is a change in class for that day. It is important in this course to stay organized with your notes.

**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 will use the D2L newsfeed as an easy way to communicate with the class. You need to click on the D2L course called MATH-1342-070 - Intro to Prob and Stats-CoReq to access our D2L course. If this course does not show up for you, please email me immediately.

- Click on content to see posted files
- Click on course home to see the newsfeed

**Miscellaneous**

- Email is the best way to get a hold of me outside of class and office hours. Please contact me through email instead of using my office phone number.
- If you ever email me during the school week and you do not get a reply within 24 hours, please resend the email because I did not receive it.

See [http://www3.sfasu.edu/math/docs/syllabi/MATH1342Syllabus.pdf](http://www3.sfasu.edu/math/docs/syllabi/MATH1342Syllabus.pdf) for elements common to all sections.
<table>
<thead>
<tr>
<th>Week #</th>
<th>Week Starting on:</th>
<th>Material Covered and Exam Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>August 23rd</td>
<td>Course Introduction</td>
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<tr>
<td></td>
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<td>Introduction to Statistics</td>
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<tr>
<td>2</td>
<td>August 30th</td>
<td>Case Study 1A</td>
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<tr>
<td>3</td>
<td>September 6th</td>
<td>Case Study 1A</td>
</tr>
<tr>
<td>4</td>
<td>September 13th</td>
<td>Case Study 1A</td>
</tr>
<tr>
<td>5</td>
<td>September 20th</td>
<td>Case Study 1A</td>
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<td></td>
<td></td>
<td>Exam 1: Thursday, September 23rd</td>
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<tr>
<td></td>
<td></td>
<td>(Exam 1 Material: Introduction to Statistics and Case Study 1A)</td>
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<tr>
<td>6</td>
<td>September 27th</td>
<td>Case Study 1B</td>
</tr>
<tr>
<td>7</td>
<td>October 4th</td>
<td>Case Study 1B</td>
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<tr>
<td>8</td>
<td>October 11th</td>
<td>Case Study 1B</td>
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<td></td>
<td></td>
<td>Exam 2: Thursday, October 14th</td>
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<td></td>
<td></td>
<td>(Exam 2 Material: Case Study 1)</td>
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<td>9</td>
<td>October 18th</td>
<td>Case Study 2A</td>
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<tr>
<td>10</td>
<td>October 25th</td>
<td>Case Study 2A</td>
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<tr>
<td>11</td>
<td>November 1st</td>
<td>Case Study 2B</td>
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<td>12</td>
<td>November 8th</td>
<td>Case Study 2B</td>
</tr>
<tr>
<td>13</td>
<td>November 15th</td>
<td>Exam 3: Tuesday, November 16th</td>
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<td></td>
<td></td>
<td>(Exam 3 Material: Case Study 2)</td>
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<tr>
<td></td>
<td></td>
<td>Case Study 3A</td>
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<tr>
<td></td>
<td>November 22nd</td>
<td>Thanksgiving Break</td>
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<tr>
<td>14</td>
<td>November 29th</td>
<td>Case Study 3A</td>
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<tr>
<td></td>
<td></td>
<td>Case Study 4A</td>
</tr>
<tr>
<td>15</td>
<td>December 6th</td>
<td>Final Exam: Tuesday, December 7th</td>
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<tr>
<td></td>
<td></td>
<td>from 10:30 am to 12:30 pm</td>
</tr>
</tbody>
</table>

Case Study 1 consists of Case Study 1A and Case Study 1B
Case Study 2 consists of Case Study 2A and Case Study 2B
The entire course is naturally cumulative. We will use the introduction to statistics material throughout the entire course.
Student Registration Instructions

To register for Math 1342 Sullivan Fall 2021:

2. Under Register, select Student.
3. Confirm you have the information needed, then select OK! Register now.
4. Enter your instructor's course ID: sullivan72040, 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.

   If you're taking another semester of a course, you skip this step.
7. From the You're Done! page, select Go To My Courses.
8. On the My Courses page, select the course name Math 1342 Sullivan Fall 2021 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 Math 1342 Sullivan Fall 2021 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.
5. Enter an access code or buy access with a credit card or PayPal.
**Course description:** Probability, random variables, mean and variance, binomial distribution, normal distribution, statistical inference and linear regression.

**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

**Credit hours:** 3

The following is an excerpt from SFA Policy 5.4:

*The federal definition of a credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates:*

1. **Not less than one hour of classroom or direct faculty instruction and a minimum of two hours out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or 10 to 12 weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time, or;**

2. **At least an equivalent amount of work as outlined in item 1 above for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.**

To this end, all students in courses offered by the Department of Mathematics and Statistics that wish to be successful should plan to spend a minimum of two hours outside of class for every credit hour associated with this course. Expected activities to be completed in the time outside of class include reviewing notes from previous class meetings, reading assigned course resources, completing all assigned exercises and projects, and performing periodic assessment preparation.

**Course Prerequisites and Corequisites:** See general course prerequisites.

**General Education Core Curriculum:** This course has been selected to be part of SFA’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. Assessment of these objectives at SFA will be based on student work from all core curriculum courses. This student work will be collected in D2L, the assessment management system selected by SFA to collect student work for core assessment.

By enrolling in MATH 1342 Introduction to Probability and Statistics you are also enrolling in a Core Curriculum Course that fulfills the Mathematics Core Objective requirement.

The chart below indicates: (a) The core objectives that are required to be taught in this course per the Texas Higher Education Coordinating Board (THECB), (b) How the required core objectives will be addressed.
Core Curriculum Objective Table

<table>
<thead>
<tr>
<th>Core Objective</th>
<th>Definition</th>
<th>How the Core Objective Will be Addressed</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>Case study 1A</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>Hypothesis testing in Case study 2A and 2B</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>Case study 2A</td>
</tr>
</tbody>
</table>

Course 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.

Approximate time spent:

- Descriptive Statistics [CO 1, 2, 3]: 10%
- Probability [CO 1, 2, 3]: 20%
- Probability Distributions [CO 1, 2, 3]: 20%
- Sampling Distributions [CO 1, 2, 3]: 10%
- Statistical Inference [CO 1, 2, 3]: 30%
- Linear Regression [CO 1, 2, 3]: 5%
problems by thinking critically, communicating logically ordered solutions with complete and correct notation, and applying
empirical or quantitative skills as appropriate to the problem. 5%

Academic Integrity
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 (SFA policy 4.1):
Academic dishonesty includes both cheating and plagiarism. Cheating includes, but is not limited to:
• using or attempting to use unauthorized materials on any class assignment or exam;
• falsifying or inventing of any information, including citations, on an assignment;
• helping or attempting to help other student(s) in an act of cheating or plagiarism.

Plagiarism is presenting the words or ideas of another person as if they were one’s own. Examples of plagiarism include, but are not
limited to:
• submitting an assignment as one's own work when it is at least partly the work of another person;
• submitting a work that has been purchased or otherwise obtained from the Internet or
another source;
• incorporating the words or ideas of an author into one's paper or presentation without giving
the author credit.

Withheld Grades Semester Grades (SFA Policy 5.5)
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.

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.

SFASU Mental Health Statement: SFASU values students’ mental health and the role it plays in academic and overall student
success. SFA provides a variety of resources to support students mental health and wellness. Many of these resources are free, and
all of them are confidential.

On-campus Resources:
SFASU Counseling Services

sfasu.edu/math
Math 1342 – Introduction to Probability and Statistics
Syllabus Continuation

www.sfasu.edu/counselingservices
3rd Floor Rusk Building
936-468-2401

SFASU Human Services Counseling Clinic
www.sfasu.edu/humanservices/139.asp
Human Services Room 202
936-468-1041

Crisis Resources:
Burke 24-hour crisis line 1(800) 392-8343
Suicide Prevention Lifeline  1(800) 273-TALK (8255)
Crisis Text Line:  Text HELLO to 741-741

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 10.4). 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.

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]

There are no specific program learning outcomes for this major addressed in this course. It is a general education core curriculum course and/or a service course.

Date of document: 08/09/2021