On Introduction to Probability and Statistics - MATH 1342-503

Name: Kent Riggs, Ph.D.  
Email: riggske@sfasu.edu  
Phone: (936) 468-6263

Office: #350 in Bush Mathematical Sciences Building  
Office Hours: 9-11:30 on MW or by appt. 
Department: Mathematics and Statistics

Class meeting time and place: Online

Course Description
Probability, random variables, mean and variance, binomial distribution, normal distribution, statistical inference, and linear regression.

Course Contact Hours and Study Hours
Approximately 3 hours of online instruction and at least 6 hours of homework/study per week.

Text and Materials: Discovering Statistics by Hawkes, 3rd edition

The Web Platform for Discovering Statistics by Hawkes, 3rd Edition can be launched by following directions given in the Student Getting Started Web on D2L.

Note: The Web Platform contains an Ebook as well as the Learn, Practice, and Certify components. This platform requires the purchase of an access code. For those interested, a hardback version of the text is available and can be ordered by the publisher or some online book distributor. If for some reason (e.g. delayed financial aid) you cannot purchase an access code for the first day of class, then a temporary access code can be created per the instructions on the quick start guide. Hawkes has excellent technical support and can be reached at 1-800-426-9538.

Grading Policy
The final average will be computed using the following items and weights:
- Online Homework (15%), Online Discussions (10%), Exam I (25%), Exam II (25%), Final Exam (25%)

Course Requirements

Online Homework: This will consist of homework on the Hawkes software. The due dates for the Hawkes software will be strictly enforced. The due dates are posted on the D2L calendar and can also be found in your Hawkes Dashboard. If an assignment is late by one day, then 90% is the highest possible grade. If an assignment is late by two days, then 70% is the highest possible grade. If an assignment is late by three days, then 50% is the highest possible grade. If an assignment is not completed within 3 days of the due date, a grade of 0 will be assigned. For technical support, Hawkes can be reached at 1-800-426-9538.

Online Discussions: Many times (weekly) throughout the term you will be required to participate in group discussions involving key concepts in the course. I will place each student in a group of 4-5 students. Also, I will generate the discussions in D2L. Your grade for this component is based on the frequency, correctness, and quality of your responses.

Exams: The two exams and final exam are face-to-face. There are no make-ups for missed exams, so make every effort to be present for each exam. If you know ahead of time that you will miss an exam, let me know at least one day before the scheduled exam and we will attempt to work something out. 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. The first exam will be given on February 22 from 4-5:30 p.m. The second exam will be given on April 11 from 4-5:30 p.m. The final exam is comprehensive and will be given on May 6 from 4-6 p.m. The exams will be administered in the Bush Mathematical Sciences Building, with the exact room location forthcoming. Note: If a student has a prohibitively long distance to travel to take any exam, he/she may take the exam at a proctored testing center approved by me. If you think you need to take an exam at a proctored location, then contact me as soon as possible. Also, dual credit students should contact me as soon as possible to coordinate exam proctoring at his/her high school campus.

Course Calendar (For a detailed calendar, see the D2L Calendar)

Communication: Please note that email via Brightspace D2L is the best way to contact me during the semester. Please send and check emails through D2L. D2L will be the main medium of communication. I will generally respond to emails within 24 hours unless there is an upcoming weekend or holiday when the email is sent. Also, note that the D2L email system is unable to send emails outside of D2L.
Attendance Policy

Regular online participation is expected.

See https://math.sfasu.edu/docs/syllabi/MATH1342Syllabus.pdf for elements common to all sections.
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.
Math 1342 – Introduction to Probability and Statistics  
Syllabus Continuation

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 through 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 Displays of Data
  - Measures of Location, Dispersion, and Position
- Sampling Distributions [CO 1, 2, 3]
  - Random Variables and Samples
  - Binomial Distribution
  - Normal Distribution
  - Student’s-t Distribution
  - Central Limit Theorem
- Statistical Inference [CO 1, 2, 3]
  - Hypothesis Testing
  - Estimation
    - Point Estimation
    - Interval Estimation
- Simple Linear Regression [CO 1, 2, 3]

Approximate time spent

- Descriptive Statistics: 10%
- Sampling Distributions: 20%
- Statistical Inference: 60%
- Simple Linear Regression: 10%

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 the bulleted content. 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.

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.

Academic Integrity

The Code of Student Conduct and Academic Integrity outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.

Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.

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. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.

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.

Student Wellness and Well-Being

SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc.
If you are experiencing concerns, seeking help, 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:**
The Dean of Students Office (Rusk Building, 3rd floor lobby)
www.sfasu.edu/deanofstudents
936.468.7249
dos@sfasu.edu

SFA Human Services Counseling Clinic Human Services, Room 202
www.sfasu.edu/humanservices/139.asp
936.468.1041

The Health and Wellness Hub “The Hub”
Location: corner of E. College and Raguet St.

To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:

- Health Services
- Counseling Services
- Student Outreach and Support
- Food Pantry
- Wellness Coaching
- Alcohol and Other Drug Education

www.sfasu.edu/thehub
936.468.4008
thehub@sfasu.edu

**Crisis Resources:**
- Burke 24-hour crisis line: 1.800.392.8343
- National Suicide Crisis Prevention: 9-8-8
- 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.

*Date of document: 08/23/2023*