College of Sciences & Mathematics Class Syllabus / Policy Sheet

Spring 2024 – STAT 3342 – Statistical Methods

Name: Greg Miller, PhD
Department: Mathematics & Statistics
Email: gmiller@sfasu.edu
Phone: 468-1860
Office: 312, Math Building
Office Hours: Mon 12:30-2:30 and 3:45-5. Tue 12-2

Text and Materials:

This is a zero cost materials and text course. There is no book or software to purchase. The free JMP software is available for download through MySFA. The software R is available for free download at www.r-project.org.

Course Goals: To equip students with the skills necessary to use data in order to make better decisions. Specifically, to master statistical methods of analyzing data that empower students when it comes to interpreting data. We will cover common statistical techniques that are used often in data driven decision making in scientific fields as well as agriculture, forestry, animal science, social science, economics, and other disciplines.

Exams: Exams are given in class with the exception of the final exam which is given on the evening of May 8. There are three data analysis exams and two concept only exams (midterm/final).

Data Analysis Exam 1: Monday, February 19.
  Covers Material From Monday, January 22 through Wednesday, February 14

Midterm Concepts Exam: Wednesday, March 6
  Covers all concepts in the course up to this point. Multiple choice exam with no data analysis.

Data Analysis Exam 2: Wednesday, March 27
  Covers Material From Wednesday, February 21 through Wednesday, March 20

Data Analysis Exam 3: Monday, April 22
  Covers Material From Monday, March 25 through Wednesday, April 17

Final Comprehensive Concepts Exam: Wednesday, May 8 (evening)
  Covers all concepts in the course. Multiple choice exam with no data analysis.

Homework: Each week homework will be assigned. Some of it will be turned in for a grade and some of it will not. Across the semester, you will have approximately 8-10 homework grades. You must be organized and neat on the homework assignments. This includes the paper itself and your handwriting. If I think the homework you turn in is ugly – which is at my subjective opinion – then I will deduct points for lack of presentation.
Grading Breakdown:

Data Analysis Exam 1: 15%
Concepts Midterm: 15%
Data Analysis Exam 2: 15%
Data Analysis Exam 3: 15%
Homework: 15%
Comprehensive Concepts Final Exam: 25%

There are no extra credit opportunities in this course. There is not time.

Grading Scale:

<table>
<thead>
<tr>
<th>Course Average</th>
<th>Course Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>89.5 or higher</td>
<td>A</td>
</tr>
<tr>
<td>79.5 to 89.5</td>
<td>B</td>
</tr>
<tr>
<td>69.5 to 79.5</td>
<td>C</td>
</tr>
<tr>
<td>59.5 to 69.5</td>
<td>D</td>
</tr>
<tr>
<td>Under 59.5</td>
<td>F</td>
</tr>
</tbody>
</table>

If you land EXACTLY on the border between two letter grades, you earn the higher of the two.
FINE PRINT (REQUIRED BY LAW OR UNIVERSITY POLICY)

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.

The recommended penalty submitted with any academic integrity violation in this course is that the student receives an F for the ENTIRE COURSE.

Withheld Grades Semester Grades Policy (5.5)

Please copy and paste the following information regarding Withheld Grades into your syllabus. Add additional information as needed to meet your departmental or course needs.

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 coursework 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 to compute the grade point average. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.

Students with Disabilities

Please copy the following statement and paste it into your course syllabus.

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 promptly may delay your accommodation. For additional information, go to http://www.sfasu.edu/disabilityservices/.

Please copy everything below and paste it into your course syllabus.

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](http://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](http://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](http://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
Course description: Analysis of variance, regression analysis and nonparametric methods. The course will stress the use of computer packages MINITAB or SAS and the interpretation of the outputs.

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 Prerequisite and Corequisites: MATH 1342.

Course outline:

- Review of Probability & Basic Inference
  - Probability and Sampling Distributions
  - Confidence intervals and hypothesis testing
  - Introduction to MINITAB and/or SAS
  - Inferences for a Single Population
  - Inferences for two populations
  - Approximate time spent: 20%

- Analysis of Variance
  - One way completely randomized design
  - Multiple Comparisons
  - Randomized Block Design
  - Factorial Designs
  - Approximate time spent: 30%

- Regression Analysis
  - Linear Regression
  - Multiple Regression
  - Approximate time spent: 30%

- Nonparametric Methods
  - One sample
  - Two Independent Samples
  - More than two samples
  - Randomized block design
  - Rank correlation
  - Approximate time spent: 20%
Student Learning Outcomes (SLO): At the end of STAT 3320, a student who has studied and learned the material should be able to:

1. Demonstrate understanding of sampling distributions and their role in statistical analysis.  
   [EEO: 3, 5, 6]
2. Recognize experiments designed according to criteria listed in course outline.  
   [EEO: 1, 2, 3]
3. Analyze data sets generated from experiments designed according to criteria listed in course outline with or without the aid of a computer.  [EEO: 1, 4, 6]
4. Report results of statistical analysis of data generated from experiments designed as according to criteria listed in course outline.  [EEO: 2]

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.

Exemplary Educational Objectives (EEO):

1. To apply arithmetic, algebraic, geometric, higher-order thinking, and statistical methods to modeling and solving real-world situations.
2. To represent and evaluate basic mathematical information verbally, numerically, graphically, and symbolically.
3. To expand mathematical reasoning skills and formal logic to develop convincing mathematical arguments.
4. To use appropriate technology to enhance mathematical thinking and understanding and to solve mathematical problems and judge the reasonableness of the results.
5. To interpret mathematical models such as formulas, graphs, tables and schematics, and draw inferences from them.
6. To recognize the limitations of mathematical and statistical models.

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](http://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](http://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](http://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