COURSE SYLLABUS AND POLICY STATEMENTS
BIOMETRICS – FORS 5317
Spring, 2024

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Office: Forestry Building 227
Office Hours: Monday & Wednesday: 9:00 – 11:30 am
Tuesday & Thursday: 11:00 – 12:00 pm
Others by appointment
Department: Forestry
Class meeting time and place: Tue. and Thur., 8:00 am – 9:15 am, Forestry Building 102 or 240
Course communication: D2L

COURSE DESCRIPTION

3 semester hours, 150 minutes lecture and 6 hours of out-of-class work per week for 15 weeks. This course is designed to provide natural resource management graduate students an exposure to applied statistics. The focus will be to learn methods of data summary and statistical tests appropriate for different types of data in an applied context. Commonly used experimental designs in forestry and biology are also covered. The class includes a lecture component plus assignments using statistical software like SAS and R. SAS and R codes for all data analysis examples are provided. No prerequisites are required but an undergraduate class in statistics is desirable.

PROGRAM LEARNING OUTCOMES

Forestry 5317 is a required class of all students pursuing a M.S. in Forestry and thus competency is required. The course is designed to address the following Program Learning Outcomes (PLOs), as stated in the M.S. Program Matrix:

1) The student will demonstrate proficiency in research design, relative to their field of study,
2) The student will demonstrate proficiency in the process of reviewing scientific literature pertinent to their field of study,
3) The student will demonstrate proficiency in basic statistical analysis, relative to their field of study,
4) The student will demonstrate preparation to pursue a professional career in subject, and
5) The student will demonstrate competency in oral and written communication skills.
The above PLOs are also recognized as vital components by the Society of American Foresters, program’s accrediting agency.

<table>
<thead>
<tr>
<th>Course</th>
<th>PLO 1</th>
<th>PLO2</th>
<th>PLO 3</th>
<th>PLO 4</th>
<th>PLO 5</th>
</tr>
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<tbody>
<tr>
<td>FORS 5317</td>
<td>A</td>
<td>A</td>
<td>M</td>
<td>A</td>
<td>N/A</td>
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</tbody>
</table>

N/A – Not Applicable – course does not support the Program Learning Outcome.
A – Advanced – FORS 5317 supports Program Learning Outcome by providing students with transitional, high-level topic-specific information, activities, and opportunities that enable the students to apply their critical thinking and tactical skills to resolve increasingly challenging strategic situations.
M – Mastery – FORS 5317 support Program Learning Outcome by providing students with opportunities to independently apply tactical and strategic planning skills to successfully accomplish real-world, non-academic management objectives. Completes students’ preparedness for entry-level professional activity accomplishment.

**STUDENT LEARNING OUTCOMES**

Upon successful completion of this course, the student will:

1) Understand how to use statistics to analyze biological data (PLO #1 and 3),
2) Understand the concept of statistical inference and hypothesis testing in the context of experimental design (PLO #1 and 4),
3) Be able to interpret statistical results in a meaningful context for application by practitioners in the field (PLO #4 and 5), and
4) Understand how statistical analysis fits in the larger context of the scientific literature (PLO #2).

**REQUIRED TEXT**

COURSE REQUIREMENTS AND GRADING SYSTEM

Grades will be based on the number of points earned in exams and homework assignments. A total of 100 points are possible. On a percentage basis, final grades will be computed as: 90+ = A, 80 – 89 = B, 70 – 79 = C, 60 – 69 = D.

Homework Assignments: There will be 4 graded homework assignments, each worth 15 points, for a total of 60 points. Homework assignments are typically due one week following the assignment date unless I assign another due date. If you cannot turn in your reports on time, you must contact me before the due time. Failure to turn in a homework assignment by the due date, without an excused reason, will result in a deduction (10% every 24 hours delay) for that assignment.

Each student must work faithfully on his/her lab reports although you can work together on the homework assignments. Copying results from someone else (even from an earlier semester) will result in a zero grade. Do not use AI to generate any part of the report. Doing so is academic dishonesty. Reports must be written in a professional manner, free from typographical, spelling, and grammatical errors. You must show all your work on each problem; failure to do so will result in no credit for a problem. All written reports will be submitted in hard copy.

Exam: There will be one exam (40 points). You must finish your work alone on the exam. Exams may be returned only to review grades, but you will not be able to keep the exams permanently.

ATTENDANCE POLICY

I expect every person to attend class. It is the best way to learn the material. I will keep attendance records, which I will use to decide “borderline” grades. For instance, if you regularly attend class and your final grade is “89”, I will be highly inclined to give you an “A” for the class. If you have to miss a class with an excused reason, you have to contact me before the class.

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. Penalties may include, but are not limited to, no credit for the assignment or exam, failure of the course, or expulsion from the university.

STUDENT ACADEMIC DISHONESTY POLICY (4.1)

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.

**COURSE GRADES 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. Please read the complete policy at [http://www.sfasu.edu/policies/course-grades-5.5.pdf](http://www.sfasu.edu/policies/course-grades-5.5.pdf)

**ACADEMIC ACCOMMODATION FOR STUDENTS WITH DISABILITIES POLICY (6.1)**

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/.

MENTAL HEALTH and WELNESS

SFA 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:**
SFA Counseling Service [www.sfasu.edu/counselingservices](http://www.sfasu.edu/counselingservices)
Health and Wellness Hub (corner of E. College and Raguet)
936.468.2401

SFA Human Services Counseling Clinic [www.sfasu.edu/humanservices/139.asp](http://www.sfasu.edu/humanservices/139.asp) Human Services, Room 202 936.468.1041

**Crisis Resources:**
Burke 24-hour crisis line: 1.800.392.8343S
National Suicide Crisis Prevention: 9-8-8
Suicide Prevention Lifeline: 1.800.273.TALK (8255) Crisis Text Line: Text HELLO to 741-741

RESPONSE USE OF TECHNOLOGY

It is expected that all students will only use cell phones, PDAs, laptop computers, MP3 players and other technology outside of class time or when appropriate in class. Answering a cell phone, texting, listening to music or using a laptop computer for matters unrelated to the course may be grounds for dismissal from class or other penalties.

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. Please read the complete policy at [http://www.sfasu.edu/policies/student-code-of-conduct_10.4.pdf](http://www.sfasu.edu/policies/student-code-of-conduct_10.4.pdf).
SOCIAL JUSTICE STATEMENT

The Arthur Temple College of Forestry and Agriculture at SFASU is committed to social justice. I concur with that commitment and expect to maintain a positive learning environment based upon open communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

COURSE CONTENT AND TENTATIVE SCHEDULE

<table>
<thead>
<tr>
<th>Topic</th>
<th>Content</th>
<th>Homework</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to SAS/R</td>
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<tr>
<td>2</td>
<td>Descriptive statistics</td>
<td>HW #1</td>
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<tr>
<td>3</td>
<td>Hypothesis Tests ($t$, $\chi^2$ and $F$-test)</td>
<td>HW #2</td>
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<td>4</td>
<td>One-way Analysis of Variance</td>
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<tr>
<td>5</td>
<td>Multiple Comparison</td>
<td>HW #3</td>
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<tr>
<td>6</td>
<td>Two- and Multiple-way Analysis of Variance</td>
<td>HW #4</td>
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<tr>
<td>7</td>
<td>Others</td>
<td>Exam</td>
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</tbody>
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