COURSE SYLLABUS AND POLICY STATEMENTS
BIOMETRICS – FORS 5317
Fall, 2023

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Office Hours: Monday & Wednesday: 9:00 – 11:30 am
Tuesday & Thursday: 8:00 – 9:15 am
By appointment
Department: Forestry
Class meeting time and place: Tue and Thur, 9:30 am – 10:45 pm, Forestry Building 102 or 240
Course communication: D2L

COURSE DESCRIPTION

3 semester hours, 3 hours lecture and 6 hours of out-of-class work per week. This course is
designed to provide natural resource management graduate students an exposure to applied
statistics. The focus will be to learn which statistical tests are appropriate for different types of
data in an applied context (i.e., no derivation of theorems, interpreting results, etc.). The class
includes a lecture component plus assignments using statistical software like SAS and R. 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.
### M.S. Forestry Program Learning Outcomes

<table>
<thead>
<tr>
<th>Course</th>
<th>PLO 1</th>
<th>PLO 2</th>
<th>PLO 3</th>
<th>PLO 4</th>
<th>PLO 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORS 5317</td>
<td>A</td>
<td>A</td>
<td>M</td>
<td>A</td>
<td>N/A</td>
</tr>
</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 due one week following the assignment date. Failure to turn in a homework assignment by the due date will result in a ZERO for that assignment. You must show all your work on each problem; failure to do so will result in no credit for a problem. You can work together on the homework assignments.

Exam: There will be one exam (40 points). You must show all your work on each problem; failure to do so will result in no credit for a problem. You must finish your work alone on the exam.

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)

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/student_academic_dishonesty.pdf

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 promptly 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
Health and Wellness Hub (corner of E. College and Raguet)
936.468.2401

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

Crisis Resources:
Burke 24-hour crisis line: 1.800.392.8343S
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

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>
</tr>
<tr>
<td>6</td>
<td>Two- and Multiple-way Analysis of Variance</td>
<td>HW #4</td>
</tr>
<tr>
<td>7</td>
<td>Others</td>
<td>Exam</td>
</tr>
</tbody>
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