THE GEORGE WASHINGTON UNIVERSITY  
Department of Statistics  

Intermediate Statistical Laboratory: Statistical Computing Packages  

Stat 2183-80 (2183W-80) – Fall 2016  
SYLLABUS  

Course and Contact Information  
Course: STAT 2183W-81 Intermediate Statistical Laboratory: Statistical Computing Packages  
Semester: Fall 2016  
Lecture: Monday and Wednesday, 2:20 – 3:35pm  
Location: Hall of government, Room 103  

Instructor  
Name: Joshua Landon  
Office: Rome Hall, Room 756  
Phone: 202-994-7851  
E-mail: jlandon@gwu.edu  
Office hours: 1-2pm on Monday  

Course Description  
The purpose of this course is to teach the methodology and the skills needed to use the statistical package SAS to analyze data from experiments or surveys. The student is expected to be familiar with the concepts of confidence interval, hypothesis testing and the central limit theorem. In addition to presenting information on statistical packages, this course will present many new statistical techniques on an applied level. Topics to be covered include:  

A) Parametric Inference  
1) Review: one sample z and t tests  
2) Review: two sample z and t tests  
3) Categorical data analysis  
4) Analysis of variance (one way and two way)  
5) Tests of independence and goodness of fit tests  
6) One, two and k sample test for the variance  
7) Regression and correlation (simple and multiple)  
8) Analysis of covariance
B) Nonparametric Inference
   1) Permutation tests
   2) One sample sign and Wilcoxon tests
   3) Two sample Wilcoxon test for location
   4) Kruskal–Wallis test
   5) Friedman test

Prerequisites
An introductory statistics course: Stat 1051, Stat 1053, Stat 1111, or equivalent.

Required Text

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Edition</th>
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<tbody>
<tr>
<td>Ott and Longnecker</td>
<td>An Introduction to Statistical Methods and Data Analysis</td>
<td>6th</td>
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Learning Outcomes:
As a result of completing this course, students will be able to:
1. Perform all of the relevant tests from the topics covered, and determine which test is appropriate for any given data set.
2. Perform all of the tests using SAS.
3. Write quality statistical reports, detailing the statistical analysis and conclusions.

Average minimum amount of independent, out-of-class, learning expected per week:
Over 15 weeks, students will spend 2.5 hours (150 minutes) per week in lecture. Homework assignments and other out-of-class work is estimated at around 5 hours per week (75 hours for the semester) and includes a 2-hour final exam for which approximately 10 hours of review is assumed.

Grading
- Assignments (40%)
- Midterm Exam (30%)
- Final Exam (30%)
University Policies

University Policy on Religious Holidays

1. Students should notify faculty during the first week of the semester of their intention to be absent from class on their day(s) of religious observance.

2. Faculty should extend to these students the courtesy of absence without penalty on such occasions, including permission to make up examinations.

3. Faculty who intend to observe a religious holiday should arrange at the beginning of the semester to reschedule missed classes or to make other provisions for their course-related activities.

Support for Students Outside the

Disability Support Services (DSS)
Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202-994-8250 in the Rome Hall, Suite 102, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: gwired.gwu.edu/dss/

Mental Health Services 202-994-5300
The University's Mental Health Services offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include: crisis and emergency mental health consultations, confidential assessment, counseling services (individual and small group), and referrals. counselingcenter.gwu.edu/

Academic Integrity Code
Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information. For the remainder of the code, see: studentconduct.gwu.edu/code-academic-integrity