Columbian College of Arts & Sciences
Survey Design and Data Analysis Graduate Certificate Program

Course Syllabus

Statistical Computing Packages for Survey Research (STAT 6234), Fall Semester 2012
Instructor: James D. Ashley
Thursdays, 6 PM to 8:30 PM
Office Hours: Thursdays, 5:30 to 6 PM or by appointment

Contact Information:
James D. Ashley
Office: (202) 512-6041
E-mail: jashley@email.gwu.edu

Text: There is no required text book.

If you would like books for the material that we will cover, I will refer to the following.


Diez, D; Barr, C; and Cetinkaya-Rundel, M (2012). OpenIntro Statistics. ISBN 978-1478217206

Course Description:
This is a data analysis course that shows how to use the statistical packages SAS and SPSS to help solve both simple and complex real-life data problems including one-, two-, and k-sample statistical problems. Basic concepts include data preparation, modification, analysis, interpretation, and communication of results.

Learning Outcomes:
As a result of completing this course, students will be able to:
1. Write a basic program in SPSS and SAS for a simple data analysis problem;
2. Perform basic descriptive, exploratory and confirmatory data analysis; and
3. Identify appropriate modeling concepts based on the characteristics of the data.

Software
SAS
A student version of the SAS package will be available for course participants from GWU. It is highly recommended that students make use of this offer since it will allow them to work on problems at home on their own PC. The GWU computing lab is also available during regular business hours, unless used by another class. Details for obtaining the software can be found at http://itl.gwu.edu/itl_sas.html.
Please print the request form [http://itl.gwu.edu/pdf/itl_SAS_User_Agreement_SAS93_Editable.pdf](http://itl.gwu.edu/pdf/itl_SAS_User_Agreement_SAS93_Editable.pdf) in class, and have it signed by either instructor before leaving class. You will need to bring a blank DVD to the Instructional Technology Lab to get SAS.

**SPSS**

We will use SPSS version 20. The full version is loaded on the servers in the instructional labs at GWU. Students may wish to purchase a student copy for your home use; preferably the full version or the Graduate Pack. There is also a “student version,” however; it limits your datasets to 50 variables and 1500 cases. See [http://www.onthehub.com/spss/](http://www.onthehub.com/spss/) or [http://studentdiscounts.com/spss.aspx](http://studentdiscounts.com/spss.aspx).

If you would like more SPSS help, I suggest the online class notes that be found at [http://www.ats.ucla.edu/stat/spss/notes_old/default.htm](http://www.ats.ucla.edu/stat/spss/notes_old/default.htm).

**Teaching Style:**

Each class will consist of brief lectures on important statistical concepts mixed with time working through problems on the computer. As much as possible, this will be a cooperative exercise, and students are encouraged to present their own solutions to problems discussed in class.

**Attendance Policy:**

Due to the fact that graduate courses meet for only 14 sessions per semester, participants are expected to be present for all sessions. Anyone who will miss a session must obtain prior approval, and arrange to turn in any assignments at a mutually agreed upon time.

**Homework:**

There will be five homework assignments covering the major topics of the course. Each assignment will be project based and consist of a researchable question and general guidance on the steps necessary to answer that question. Students are expected to turn in a written summary of their analysis along with the SAS and/or SPSS programs and log files. Each assignment will be worth 30 points and will be graded based on the accuracy, clarity, and completeness of the computer programs; the interpretation of the statistical analysis; and the clarity of the analysis summary.

**Exam:**

There will be one exam that will concentrate the student’s ability to use computing packages to analyze data and interpret the results. The exam will be given on October 25th (in lieu of session 9). Students will be able to download the exam and a data set from Blackboard on the date of the exam. Completed exams must be turned in, via Blackboard the day after the exam date by 9 am. (150 points)

**Final Project and Presentation:**

Each student will be required to complete a final project that consists of an analysis of survey data. Students may choose a topic they are interested in and/or use data they are currently working on and must submit an analysis proposal by November 1st. If a student is having difficulty identifying a topic or data set, I will provide the student with a list to choose from. With my approval, the project may include analyses not covered (more advanced topics) in this class. The final project will consist of a detailed analysis report, an executive summary, and SAS and/or SPSS programs and log files. In addition, students will be required to present key findings of their project during the class discussion on December 13th.

**Grading Criteria (500 possible points):**

- Exam 150 points
- Homework 150 points (30 points each)
- Final Project and Presentation 200 points
Grading Scale (percentage out of 500 possible points)

A   =  94 to 100
A-  =  90 to 93.9
B+  =  87 to 89.9
B   =  84 to 86.9
B-  =  80 to 83.9
C+  =  77 to 79.9
C   =  74 to 76.9
C-  =  70 to 73.9
F   =  Below 70

Academic Integrity

I personally support the GW Code of Academic Integrity. It states: “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: http://www.gwu.edu/~ntegrity/code.html

Support for Students Outside The Classroom

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 Marvin Center, Suite 242, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: http://gwired.gwu.edu/dss/

UNIVERSITY COUNSELING CENTER (UCC) 202-994-5300

The University Counseling Center (UCC) 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

http://gwired.gwu.edu/counsel/CounselingServices/AcademicSupportServices

Security

In the case of an emergency, if at all possible, the class should shelter in place. If the building that the class is in is affected, follow the evacuation procedures for the building. After evacuation, seek shelter at a predetermined rendezvous location.
### Tentative Course Schedule/Outline:

<table>
<thead>
<tr>
<th>Session #/Date</th>
<th>Topic</th>
<th>Important Dates</th>
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</thead>
<tbody>
<tr>
<td>1. August 30th</td>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td>2. September 6th</td>
<td>Editing Survey Data, Univariate Descriptive Statistics and Graphs</td>
<td></td>
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<tr>
<td>3. September 13th</td>
<td>Univariate Inference: Significance tests</td>
<td></td>
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<tr>
<td>4. September 20th</td>
<td>Bivariate Descriptive Statistics and Graphs</td>
<td>HW 1 due</td>
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<td>5. September 27th</td>
<td>Bivariate Analysis: Comparing categorical variables</td>
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<tr>
<td>6. October 4th</td>
<td>Bivariate Analysis: Comparing means of two groups</td>
<td>HW 2 due</td>
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<tr>
<td>7. October 11th</td>
<td>Introduction to ANOVA</td>
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<tr>
<td>8. October 18th</td>
<td>Introduction to Linear Regression</td>
<td>HW 3 due</td>
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<tr>
<td>9. October 25th</td>
<td>Exam (no in-class session)</td>
<td></td>
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<tr>
<td>10. November 1st</td>
<td>Introduction to Multiple Regression</td>
<td>Project Proposals Due</td>
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<tr>
<td>11. November 8th</td>
<td>Introduction to Logistic Regression</td>
<td>HW 4 due</td>
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<tr>
<td>12. November 15th</td>
<td>Survey Data From Complex Samples</td>
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<tr>
<td>November 22nd</td>
<td>Thanksgiving Break (no in-class session)</td>
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<tr>
<td>13. November 29th</td>
<td>Survey Data From Complex Samples</td>
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<td>14. December 6th</td>
<td>Real World Example: NHANES– Guest Speaker – Intro to R (if time allows)</td>
<td>HW 5 due</td>
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<tr>
<td>15. December 13th</td>
<td>Discussion of Final Projects</td>
<td>Final Project Due</td>
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**NOTE:** This syllabus is subject to change at the discretion of the course instructor; additional topics may be covered where deemed appropriate.