STAT 362: Introduction to Computer Statistical Packages

Spring Semester, 2014

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TA office hours: TBD

Texts:


Note the websites for the books, where sample programs and datasets are available:

- Cody and Smith
- Delwiche and Slaughter

Description:

This course covers the basic skills needed for using computer packages in the statistical analysis of data. Topics include data entry, checking, and manipulation, as well as the use of statistical computer packages for basic univariate descriptive statistics, inference for univariate and bivariate data, regression analysis, and analysis of variance. The course will cover most of the material in Chapters 1-7, 9, 12-14, and 17 of Applied Statistics and the SAS Programming Language.

Specifically, this course will provide an introduction to SAS, one of the most widely used statistical software packages in industry and government, and will show how to use SAS to perform a variety of statistical analyses. It will give students an overview of SAS under MS Windows and provide fundamental grounding in the DATA Step (used to access, structure, format, manipulate, and archive data) and some of the basic SAS statistical and graphical procedures.

Although this course specifically uses SAS, the basic skills introduced apply generally to other statistical software packages.

Prerequisite: STAT 250 or equivalent. (Elementary introduction to statistics including descriptive statistics, probability, estimation and hypothesis testing for (one and two) means and proportions. Statistical software used for assignments.)

Technology Prerequisites: You are expected to be proficient in using:
• The Internet, which is used to access course material within Blackboard (a Web-based course management system).
• Microsoft Windows.
• Word-processing software (preferably Microsoft Word), which will be used for assignments.
• Microsoft PowerPoint and Adobe Acrobat Reader, which will be used for accessing course documents located on the Blackboard course site.

Required Software

• SAS.
  o Virtual Computing lab

  https://www.vcl.gmu.edu/

  Instruction is provided in the following link:

  http://doit.gmu.edu/staffSection.asp?page=vcl

• Version 9.2 available on campus in the Johnson Center 34 and in Innovation Hall 301 lab.
• To load on personal PC, SAS can be licensed for one year for a small fee through Patriot Computers in the Johnson Center. Patriot Computers said they will be checking that student is registered in a statistics course using SAS so bring copy of your schedule. There is NO installation support available to the end user. (Note: Prior to leasing SAS, make sure your computer meets the minimum system requirements.)

• We will be using mainly SAS and occasionally MS Excel for data manipulation. Also, we will be using MS Word (or another word processing package with similar capabilities) for homework assignments.

General PC/Software Requirements:

• Internet Explorer, Firefox or Google Chrome, with JavaScript and cookies enabled.
• Internet Access: Course materials are delivered via Blackboard, an online course management system, which can be accessed via the Courses Tab within the myMason Portal (http://mymason.gmu.edu) . If you have not used the myMason Portal before, click on the Help Tab on the page reached via http://mymason.gmu.edu . Then, read through the two documents posted in the myMason Information & Portal Quick Guide module: Portal Quick Guide and Introduction to myMason.
• Active Mason E-mail Account: You must activate your Mason e-mail account before you can access Blackboard. Instructions for activating your Mason e-mail account are available at: http://password.gmu.edu .
• Microsoft Word, Excel, and PowerPoint 2010. These software packages are available (free of charge to registered students) via the VCL. Also, a free PowerPoint viewer is available at: http://www.microsoft.com/download/en/details.aspx?id=13.
• Adobe Acrobat Reader.

Course Delivery
• This course is a fully online and asynchronous distance learning course, which is offered using a combination of Blackboard and textbooks. This course:
• Is “asynchronous”. You may work at any location on your own computer. The course does not require student participation at a particular time of day, with the exception of office hours.
• Is not “self-paced” or independent study. You’ll work through the course with interaction from the instructor and other students, participating actively in discussions, and submitting assignments according to deadlines set by the instructor.
• Is flexible. You may fit your coursework into other activities of your semester, but expect to spend several hours each week on the course.
• Requires self-discipline. You’ll need to make regular time each week during the course to participate actively in the course by checking the Blackboard course site, completing assignments, and participating in course discussions. Plan to devote at least the amount of time you would to a campus based course, including class meetings.
• To fully understand the material, it is absolutely necessary for you to be actively involved. You need to read the required text, work through the assignments, and participate in online discussions to check your knowledge. You need to keep up with the course schedule and to understand the material in one topic before moving on to the next.

Blackboard:

• All course material will be maintained in Blackboard including readings, programming assignments, due dates, etc. The majority of the material is organized into topics; there are seven topics for this course.
• The topic material for each week will be released no later than the corresponding Monday morning by 7 a.m. and will remain available through the end of the course. You are expected to develop proficiency in using Blackboard’s features and to login to this system frequently to keep up with the course schedule. Any changes to the schedule as the course progresses will be posted in Blackboard.

Instructor and Teaching Assistant Office Hours:

Office hours and help sessions using Collaborate through Blackboard will be held weekly by the instructor and the TA.

These are tentatively scheduled (Dr. Tang: Wednesday 2pm-3pm on blackboard, Ms. Tran: ... ). These Collaborate sessions are unstructured. So, unless you have questions, there is no reason to sit through the entire session. You can join and re-join the session multiple times during the scheduled times.

Communication:

• The primary mode of asynchronous communication in this course is the Discussion Board in Blackboard. Several discussion topics are available including general topics and topics specific to assignments.
  • Unless noted otherwise, direct your comments in the Discussion Board to fellow students, rather than to the instructor. You are also encouraged to answer each other’s questions.
• The instructor checks the Discussion Board often, at least once a day on Mondays through Fridays. The instructor does not necessarily check it more frequently, so do not wait until the last day before an assignment is due to contact the instructor if you have questions.
• E-mails concerning this course should be used only to discuss sensitive, confidential information (e.g., grade concerns, personal circumstances requiring special accommodations, etc.)
• When you send an e-mail to the TA or the instructor, please place SAS at the beginning of the subject line.
• E-mails sent by the instructor will be sent to your Mason e-mail account. If you choose to utilize another e-mail account, please make sure your Mason e-mail account is forwarded to your preferred e-mail address. Information on forwarding your Mason e-mail to another account is available at: http://itusupport.gmu.edu/STG/emailaccess.asp

Grading:

For STAT 362, there are online participation, homework assignments, lab assignments, midterm and final exams.

• Online participation:
  o All students are expected to actively participate in the online discussion board throughout the course. The types of participation include, but not limited to, posting questions related to homework problems and other course materials, answering others’ questions, and discussing homework and lab problems. Full credits will be given if a student participates at least once every week.
• Homework:
  o For each problem, unless otherwise indicated, turn in your answers to any posed questions, a copy of each SAS program submitted in a problem, a copy of the contents of the log window, and a copy of the contents of the output window that is associated with running your programs for that problem. Put your name in a title statement.
  o You must integrate the SAS programs, output (including any graphs), logs, and any written answers to questions from all problems into a single document. Do not turn in a separate document for each problem. (You may want to use the “copy and paste” features in MS Word to accomplish the required integration of material.) Unless otherwise indicated, you may edit out blank lines and page breaks at your discretion. Do not just attach separate sheets of computer output to the end of your assignment.
  o For each problem, unless otherwise specified, solve using a single SAS program. Do not write a separate program for part a, part b, etc.
  o Please use the data lines as formatted in the text, which you can either type in as shown in the text or copy/paste from the file indicated in the text that can be downloaded from the web site: www.prenhall.com/cody. Do not modify the data layout in raw data files; use any provided data files as given. When entering data directly, check and double-check the accuracy of your data entry and enter as specified in the problem.
  o Some of the problems require using SAS Help and Documentation. Also, some of the problems refer to features not explicitly covered in class but are discussed in the required reading.
You may work together on assignments.
Completed assignments are submitted as attachments via Blackboard.
The lowest homework score will be dropped.

- Lab session. The tentative plan is to have a lab session every week. You will be given 2-3 problems. You are expected to make at least one attempt to write appropriate SAS codes to solve these problems. The answers to lab assignments should follow the same requirement for the homework. You may see the answers after one attempt.

Final Grade:

- 5% for online participation
- 20% for homework assignments and lab assignments
- 35% for midterm exam
- 40% for final exam

Grading Scale

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Exception: by GMU policy, any student who does not take the in-class final exam will receive a grade of 'S/A' (stopped attending), which becomes an F on their transcript, regardless of their points earned.

Additional Comments:

- Put STAT 362 in the subject line when you send me e-mail
- You are expected to familiarize yourself with the George Mason University honor code and abide by it
- You are expected to take the exams during the designated time slot; Incompletes will not be granted except under very unusual circumstances.