

Studying Quantitative Methods at Vanderbilt

An Introduction for Graduate Students in Education and Psychology

Professor James H. Steiger

Website for incoming students: <http://www.statpower.net/310Introduction.html>
email: james.h.steiger@vanderbilt.edu

Introduction

Welcome to Vanderbilt University! We are looking forward to seeing you in August, and we want to make your transition to graduate study as smooth and productive as possible.

Training in quantitative methods is a key component of education in Education and the Psychological Sciences at Vanderbilt. During your first year, you will take at least one quantitative methods course, and probably two. Currently, there are two primary course sequences that students generally take.

Sequence A involves taking Psychology 310P in the fall, followed by a second course (often Psychology 304B A&S) in the spring. This sequence is ideally suited for students in A&S Psychology and Peabody's Department of Psychology and Human Development, who generally take this sequence. However, other students with a primary interest in the behavioral sciences may want to take this sequence. This sequence assumes that you have taken at least one high quality undergraduate course in statistics, and also assumes that you have (or can quickly regain) mastery of basic high school algebra.

Sequence B is geared more toward the interests of students in Peabody's departments of Leadership, Policy, and Organization, Teaching and Learning, Human and Organizational Development, and Special Education. This sequence involves taking Psychology 309P in the fall, followed by Psychology 310P in the spring. No previous background in statistics is required to take Psychology 309P, which also assumes that you have (or can quickly regain) mastery of basic high school algebra.

Psychology 310P is part of each of the above two sequences, and includes two lecture meetings and one lab meeting per week. Lab exercises cover basic to advanced applications of packaged statistical software, including *SPSS* and *Statistica*. Some exercises are primarily theoretical in nature, others are more practical, and are based on examples from the literature in education and psychology.

Summer Review

Students who plan to take the Sequence A are strongly encouraged to begin preparation for Psychology 310P over the summer. There are several reasons why you should do this. First, there is a wide range of quality and depth of coverage in undergraduate courses in statistics. Some students will have had extensive experience, and will have used statistics recently in research work. Other students will have only one or two weak courses, and may have forgotten much of what they learned as undergraduates.

We want your experience at Vanderbilt to be a positive and productive one. Psychology 310P, like most introductory graduate courses in quantitative methods, assumes a certain background

level of statistical knowledge. If you do not possess this minimal background, you will find the course more difficult than you should, and may find yourself at a competitive disadvantage. So, regardless of your background level, we urge you to take the time this summer to prepare for Psychology 310P. The review process should take you only a few hours a week if you begin now. Here is what you should do:

- **Obtain the textbook (Glass & Hopkins). Read chapters 1 through 6.** You will have seen much (but probably not all) of this material before, but we want you to read these chapters carefully, and solve the Mastery Test and Problems and Exercises at the end of each chapter. Answers are provided in the textbook. The information at the end of this handout should allow you to order a copy of the textbook online from Amazon.com or several other booksellers. If you cannot obtain a copy of the textbook for any reason, contact Professor Steiger via email.
- **Download the *Statistics Handouts* at Professor Steiger's website (URL given on the first page of this handout).** Read these in conjunction with the appropriate material in the textbook (as indicated on the website), and try to solve all the exercises at the end of the handouts. Solutions are provided. If you discover any errors in the handouts, or feel you need clarification concerning any aspect of the material, please feel free to contact Professor Steiger via email.
- When you have completed the two assignments above, **download two practice diagnostic tests from the website. Take the first test in a quiet room**, allocating exactly 70 minutes. ***Note that the exam is open book, open note, as are all exams in Psychology 310P.*** When you have completed the test, download the key to assess your performance. If any of the problems do not make sense, or if the answers in the key strike you as incorrect, please contact Professor Steiger immediately through email. Try to diagnose any areas of weakness uncovered by the diagnostic test. Then try the second diagnostic test, using the same procedure. If, after taking the second diagnostic test, you feel you need more assistance, please feel free to contact Professor Steiger by email.

Fall Diagnostic Testing

Upon arriving at Peabody, students who plan to take Sequence A will take a diagnostic test to help them assess their readiness for the course. This test will be virtually identical in structure and content to the practice tests discussed above. Results of this test are strictly for diagnostic purposes, ***and will not count toward the course grade.***

Course Textbook Information

Title: Statistical Methods in Education and Psychology

Authors: Glass, G.V., & Hopkins, K.

Hardcover: 608 pages ; Dimensions (in inches): 1.37 x 9.60 x 7.27

Publisher: Pearson Allyn & Bacon; 3rd edition (August 10, 1995)

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