

**Temple University**  
**Department of Criminal Justice**  
**CJ 8302 Advanced Methodological Issues in Criminal Justice Research,**  
**Syllabus – Spring 2009**

Section 002  
R – 5:00 PM – 7:30 PM  
Gladfelter Hall  
Room 513 (Computer Lab)

Professor: Matthew Hiller, Ph.D.,  
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**Course Description**

Welcome to Advanced Methodological Issues in Criminal Justice Research (Section 002). This class is intended to be a low-stress introduction to a variety of multivariate statistics that you will see in journal articles and likely use yourself at some point in your long and productive research careers. The intent of this class is to introduce you to the most common multivariate methods used in criminal justice research with a special emphasis on helping you decide when such methods are appropriate given the characteristics of the data you are analyzing or are reading about in journal articles. The multivariate analytic techniques that will be discussed include strategies for data reduction (i.e., factor analysis), for hypothesis testing (i.e., repeated measures analysis of variance, logistic regression, logit and probit analysis, survival analysis, regression for Poisson and Negative Binomial distributions), and for classification (i.e., cluster analysis, discriminant analysis), and if time permits, an introduction to the spatial analysis of crime data. Due to the binary/categorical/binomial nature of many of the dependent variables studied in criminal justice (e.g., recidivism defined as 0 = “did not recidivate” 1 = “did recidivate,” counts of how often something happened), these techniques also are often more appropriate for the analysis of criminal justice data than linear regression.

**Required Text**

You are required to purchase only one textbook for this course. There are a number of good texts on the market for doing multivariate statistics in social science, and this text was selected because it matches the style of the course and because it will serve as an excellent reference book in your growing library. It may be purchased new or used from on-line vendors like Amazon.com, Barnesandnoble.com, and Half.com.

Meyers L. S., Gamst, G., & Guarino, A. J. (2005). *Applied multivariate research: Design and interpretation*. Thousand Oaks, CA: Sage. ISBN# 978-1-4129-0412-4.

**Supplemental Readings**

Because this text does not cover each of the multivariate techniques we will cover (e.g., survival analysis), additional supplemental readings will be provided when needed throughout the semester. These may be provided in hardcopy form or on the course blackboard webpage for you to copy.

## **Approach to Instruction and Common Dataset**

Despite my rampant OCD, a comprehensive review of each technique will not be pursued. Rather, you will receive a relatively broad introduction to each technique through the assigned readings and through introductory comments made by me at the beginning of each class. This will be followed by an example that we will work through together. Then you will work on a shared dataset, with my coaching, to apply the technique to something that personally interests you in the file. Empirical analysis of adult learning shows that a minimum of three repetitions is needed to learn something new. You will get three repetitions, the first will be the readings/comments; the second will be a shared example, and the third, your application of the technique to the shared data. Learning studies also show that if you apply what you have learned to something that is personally relevant, that this elaborative style of learning will be more resistant to decay over time.

Because this is a dataset that I personally collected, I ask that you do not redistribute this to anyone else. Also, if you are really interested in pursuing your analyses for publication or for presentation at ASC, I am willing to discuss that with you.

Because lectures alone are probably the worst way to learn about statistics, this class will emphasize application of the techniques. Also, because the computations for doing these analyses are rather complex and would take a prohibitive amount of time to hand calculate, we will focus on learning how to program analyses, mostly in SPSS, and read and interpret the output. Application of each technique will be made to a common dataset (available with documentation on the course blackboard page). This is a rather complex file with hundreds of subjects drawn from consecutive annual sample of drug-involved offenders admitted to a Modified Therapeutic Community programs. I have published a number of studies from this dataset and these are available on the course webpage. These articles include:

Hiller, M. L., Knight, K., & Simpson, D. D. (1999). Risk factors that predict dropout from corrections-based treatment for drug abuse. *The Prison Journal*, 79(4), 411-430.

Hiller, M. L., Knight, K., & Simpson, D. D. (2006). Recidivism following mandated residential substance abuse treatment for felony probationers, *The Prison Journal*, 86(2), 230-241.

Hiller, M. L., Knight, K., Saum, C. A., & Simpson, D. D. (2006). Social functioning, treatment dropout, and recidivism of probationers mandated to a modified therapeutic community, *Criminal Justice and Behavior*, 33(6), 738-759.

## **Suggested Readings**

The following are additional suggested readings that might help you when you run into problems/issues in the future that this course did not answer. All would make good additions to your personal library.

Hosmer, D. W., & Lemeshow, S. (2000). *Applied logistic regression* (2<sup>nd</sup> Ed). New York, NY: John Wiley & Sons, Inc.

Kachigan, S. K. (1991). *Multivariate statistical analysis: A conceptual introduction*. New York, NY: Radius Press.

Allison, P. D. (1984). *Event history analysis: regression for longitudinal event data*. Thousand Oaks, CA: Sage.

Aldrich, J. H., & Nelson, F. D. (1984). *Linear probability, logit, and probit models*. Thousand Oaks, CA: Sage.

### **Grading and Evaluation of Student Performance**

**Portfolio.** Because this is intended to be a low-stress, empowering introduction to using multivariate statistics with criminal justice data, your primary product for this class will be a portfolio. This portfolio is intended to also serve as a reference for you in the future when you find that you need to apply one of these techniques to your own data. To that end, you will need to keep separate sections for each technique discussed. In this, you should keep personal notes from your readings, the shared example from each class, and your own analyses of the common data file. It will be important to label the SPSS output, table findings, and write brief interpretations. You can freely discuss your portfolio with the class, but ultimately it must be your sole work product.

**Participation.** It is presupposed that you will attend each class, so participation will be gauged by how you interact with the rest of the class. It will be important for you to talk to and share with others throughout this class as a means for enhancing your own and other's understanding of the material.

**Presentation.** On the last day of class (final exam day) you will give a 10-minute presentation. This presentation will describe what you consider to be the most interesting analysis that you performed during the portion of the class where you apply the statistical techniques to an analysis of the common data file that personally interests you.

#### 3. Grading Overview:

Portfolio	50%
Participation	25%
Presentation	25%

#### 4. Grading Scale:

A	93-100	C+	78-79.9	D-	60-62.9
A-	90-92.9	C	73-77.9	F	0-59.9
B+	88-89.9	C-	70-72.9		
B	83-87.9	D+	68-69.9		
B-	80-82.9	D	63-67.9		

## Course Outline

It is anticipated that most techniques will require 1-2 weeks of coverage and practice, but because there is a wide variety of prior experience in quantitative analysis represented by the students in this class (some have never had a graduate statistics course; some have had several), I have not provide exact dates, with the exception of the first topic, to allow some flexibility to the schedule. You will be told at the end of each class what readings the next class will encompass. Because you are generating much of the material you will be including in your portfolio during class time, this plan should not significantly detract from your other graduate courses.

<b>Topic/Technique</b>	<b>Reading(s)</b>
Orientation and practice with common dataset January 22, 2008	<p>Hiller, M. L., Knight, K., &amp; Simpson, D. D. (1999). Risk factors that predict dropout from corrections-based treatment for drug abuse. <i>The Prison Journal</i>, 79(4), 411-430.</p> <p>Hiller, M. L., Knight, K., &amp; Simpson, D. D. (2006). Recidivism following mandated residential substance abuse treatment for felony probationers, <i>The Prison Journal</i>, 86(2), 230-241.</p> <p>Hiller, M. L., Knight, K., Saum, C. A., &amp; Simpson, D. D. (2006). Social functioning, treatment dropout, and recidivism of probationers mandated to a modified therapeutic community, <i>Criminal Justice and Behavior</i>, 33(6), 738-759.</p>
Data reduction: Factor analysis	Meyers, Gamst, & Guarino (2005), Chapters 12a and 12b
Hypothesis testing: Repeated Measures Analysis of Variance	Meyers, Gamst, & Guarino (2005), pp 328 -362.
Hypothesis testing: Logistic Regression	<p>Meyers, Gamst, &amp; Guarino (2005), Chapters 6a and 6b</p> <p>Strauss, S. M., &amp; Falkin, G. P. (2000). The relationship between the quality of drug user treatment and program completion: Understanding the perceptions of women in a prison-based program. <i>Substance Use and Misuse</i>, 35 (12-14), 2127-2159.</p>
Hypothesis testing: Logit and Probit Analyses	Chapters 1-3, 5 in Aldrich & Nelson (1984)

Hypothesis testing: Survival Analyses	Tabachnick & Fidell (2007) pp. 506 -566 Lapham, S. C., Kapitula, L. R., C’de Baca, J., & Mcmillan, G. P. (2006). Impaired-driving recidivism among repeat offenders following an intensive court-based intervention. <i>Accident Analysis and Prevention</i> , 38, 162-169.
Hypothesis testing: Poisson and Negative Binomial Regression	TBD
Classification: Cluster Analysis	Cluster Analysis Chapter 8 in Kachigan (1991) Lang, M. A., & Belenko, S. (2001) A cluster analysis of HIV risk among felony drug offenders. <i>Criminal Justice and Behavior</i> , 28(1), 24-61.
Classification: Discriminant Analysis	Meyers, Gamst, & Guarino (2005), Chapters 7a and 7b
Spatial Analysis of Crime Data	Guest speaker, Professor Jerry Ratcliffe
Final	<b>10-minute oral presentation with PowerPoint slides</b>

**Additional Information:**

**Disability disclosure statement:**

Any student who has a need for accommodation based on the impact of a disability should contact me privately to discuss the specific situation as soon as possible. Contact Disability Resources and Services at 215-204-1280 in 100 Ritter Annex to coordinate reasonable accommodations for students with documented disabilities.

**Academic Freedom for Faculty and Students Policy:**

Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has a policy on student and faculty academic rights and responsibilities (Policy #03.70.02) which can be accessed through the following link:

[http://policies.temple.edu/getdoc.asp?policy\\_no=03.70.02](http://policies.temple.edu/getdoc.asp?policy_no=03.70.02)