

C (09/07)	<p><i>Microcomputer Lab 1</i></p> <ul style="list-style-type: none"> Setting Up Vanderbilt File Space Entering Data Value Labels Simple Summary Statistics Computing New Variables Computing Z-Scores Scaling Course Grades 	<p>SPSS Tutorial Files Lab 1 handout</p>
Week 3		
A (09/10)	<p>Variability</p> <ul style="list-style-type: none"> The range The semi-Interquartile Range The variance and standard deviation Computational formulas and their derivation Computing the variance for pooled groups Order statistics and the expected value of the range 	G&H Chapter 5
B (09/12)	<p>The Normal Distribution</p> <ul style="list-style-type: none"> The general nature of a continuous distribution Normal distribution calculations The bivariate normal distribution 	G&H Chapter 6
C 09/14	<p><i>Microcomputer Lab 2</i></p> <ul style="list-style-type: none"> Sorting Recoding Setting Up Value Labels Merging Files 	Lab 2 Handout
Week 4		
A 09/17	<p>Correlation and covariance</p> <ul style="list-style-type: none"> Basic definitions and formulas Invariance properties 	<p>GH 7.1–7.13</p> <p><i>KeyConcepts.pdf</i> handout, pages 1–13</p>
B 09/19	<p>The laws of linear combination</p> <ul style="list-style-type: none"> What is a linear combination” Identifying linear weights Linear rule for means Heuristic rule for variances and covariances 	<i>KeyConcepts.pdf</i> handout, pages 13–18.
C 09/21	<p><i>Microcomputer Lab 3</i></p> <p>Basic Correlation and Regression</p>	Lab Handout 3

Week 5		
A (09/24)	Some basic applications of linear combination theory “Rich get richer” phenomenon Creating uncorrelated scores	
B (09/26)	The special case of uncorrelated variables Linear Regression Regression notation Basic algebra of regression Least squares linear regression Covariance of predicted scores and residuals Uses of Linear Regression Descriptive Predictive	GH 8.1–8.13
C (09/28)	<i>Microcomputer Lab 4</i> Graphical regression analysis: Poverty and Infant Mortality	Lab Handout 4
Week 6		
A (10/01)	“Correlational fallacies” Correlation and causality No relation vs. no correlation Perfect correlation vs. equivalence Combining populations Restriction of range Leaving out explanatory variables	
B (10/03)	Conditional distribution theory Bivariate frequency distributions Marginal distributions Conditional distributions Regression to the mean Conditional distribution calculations in the bivariate normal distribution	Conditional Distribution Problems handout
C (10/05)	<i>Microcomputer Lab 4b</i> Regression Fallacies – Comparative Sports Performance	Lab Handout 5b

Week 7		
A (10/08)	<p>Set theory</p> <p>Discrete probability theory</p> <ul style="list-style-type: none"> Probabilistic experiments Sample spaces Simple events Compound events Three axioms Three fundamental theorems 	<p><i>Sets</i> handout</p> <p>Homework 2 Handout</p> <p>Homework 1 Due</p>
B (10/10)	<p>Probability theory (ctd)</p> <ul style="list-style-type: none"> Computing probability <ul style="list-style-type: none"> The general rule Special case: Equally likely elementary events Joint events Independence Conditional probability <ul style="list-style-type: none"> The concept The formal definition The coin in the box problem The “multiplicative rules” of probability <ul style="list-style-type: none"> General case Special case (independence) Probability of a sequence <ul style="list-style-type: none"> The “keep it alive” strategy Poker hands Smoking tables Epidemiology 	<p>GH Chapter 9</p>
C (10/12)	<p>Counting Rules and Combinatorics</p> <ul style="list-style-type: none"> Theory <ul style="list-style-type: none"> The general path rule Permutations Permutations with selection Combinations 	<p><i>Probability Theory Problems Handout</i></p> <p><i>Solutions to Probability Theory Problems Handout</i></p>

Week 8		
A (10/15)	REVIEW for EXAM 1	
B (10/17)	MIDTERM EXAM 1	
C (10/20)	Exam 1 Discussion <i>Microcomputer Lab 5</i> Data Input and Manipulation in SPSS	Lab Handout 5
Week 9		
	Fall Break – NO CLASS!!!	
Week 10		
A 10/29	Simple applications Counting the number of sets Poker hands revisited Expected value of a random variable The algebra of expected values Variance of a random variable Expected value of a function of a discrete random variable Covariance and correlation for random variables Linear combination rules for random variables The binary random variable	
B 10/31	The binomial distribution The cumulative binomial Normal approximation to the binomial Evaluating public opinion polls	
C 11/02	<i>Microcomputer Lab 6</i> Further Data Manipulation	Lab Handout 6

Week 11		
A 11/5	Parameters and statistics What is a “sampling distribution”? The notion of sampling error Principles of “good estimation” Unbiasedness Consistency Efficiency Sufficiency Maximum likelihood Parameter spaces and sample spaces Raw score rejection rules Error rates	GH Chapter 10
B 11/07	Sampling distributions and hypothesis testing Test statistics – The 1-Sample Z-test Standardized rejection rules 1-tailed and 2-tailed tests	GH Chapter 11 <i>Unified Approach</i> handout, pages 1–14
C 11/09	NOTE: NO CLASS FRIDAY	

Week 12		
A 11/12	Standardized effect size, power, and sample size calculation for the 1-sample Z-test Student's t distribution Statistical assumptions Tests on Means Independent Sample Case 1-sample test 2-sample test (independent) NOTE: TRUNCATION OF COVERAGE FOR MIDTERM 2	Case Handouts 1,2,3,11 GH, Chapter 12
B 11/14	Generalized t -statistic on linear combination hypotheses Confidence Intervals on linear combinations of means	
C 11/16	Lab 7, t -tests	Lab Handout 7

Week 13		
	Thanksgiving Holidays – No Classes	
Week 14		
A 11/26	Dependent Sample Case test on two repeated measures or matched samples general test for linear combinations on dependent samples	
B 11/28	Midterm Exam 2	
C 11/30	NOTE: LECTURE FRIDAY Tests on Proportions 1-Sample 2-Sample (independent) Confidence intervals A single proportion The difference between 2 proportions	Case Handouts 4,5, GH Chapter 13
Week 15		
B 12/03	Tests and Confidence Intervals on Dependent Proportions McNemar's Test	Case Handout 6 <i>Unified Approach</i> 14–18
A 12/05	Tests on Correlations 1-Sample 2-Sample (independent) 2-Sample (dependent) Confidence Intervals on Correlations	Case Handouts 7,8 Steiger (1980) GH 14.1-14.11 <i>Unified Approach</i> 19–23
B 12/07	NOTE: LECTURE FRIDAY The Chi-Square and F distributions	GH 16.1-16.7

Week 16		
A 12/10	Tests on variances	Case Handouts 9,10
B 12/12	Analysis of Variance – An Introduction	GH 15 Analysis of Variance handout