EPE570

Tuesday-Thursday 9:30-10:45 -TEB140

Sources

Glass, G. & Hopkins. *Statistical Methods in Education and Psychology*. (3rd Ed.) Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1996 (required)

Ryan, B.F., Joiner, B.L., Ryan, T. A., *Minitab Handbook*,(2nd Ed.) Boston: PWS-Kent Pub. 1985 (Optional)

Topics

Section I - Measuring

Measurement Scales	Readings
Nominal	Glass & Hopkins Chaps 1&2
Ordinal	
Interval	
Ratio	
Qualitative and Quantitative Variables	
Homework	

Section II - Visual Displays and Quantitative Indicators

Pictures	Readings
Histograms	G&H Chaps 3-5
Dot plots	
Stem & Leaf plots	
Box and whisker plots	
Centers, Spreads, Shapes	
Mean, Median and Mode	
Standard Deviation and Variance	
Skewness and Kurtosis	
Percentiles and Quantiles	
Funny good and Funny bad outliers	

Section III - The Gaussian Distribution

Relationships among EDA	Readings
terms and normal curve	G&H Chap. 6

Section IV - Transformations

Changing metric	Reading
Standard Scores	G&H Chap 6
Changing shapes - Ladders of Power	

Section V - Correlation

Scatterplots	Readings
Letter Value Plots	G&H Chap 7
Reliability and Validity examples	

Section VI - Simple Linear Regression

Least Squares	Readings
- assumptions	G&H Chap 8
Homework	
More than one independent variable	

Section VII - Drawing inferences

Batches, Samples & Populations	Readings
Point &Interval Estimation	G&H Chaps 9 &10
Sampling distributions	
Exploring the data	

Section VIII - Hypothesis Testing

The logic of testing hypotheses	Readings
	G&H Chaps 11-14
Specific Tests	
means	
variances	
proportions	
regression coefficients	
-- with examples	

Requirements

1. Homework related to each section must be completed and handed in.
2. A midterm - lab and paper and pencil exams and a final examination must be completed.
3. Grading policy: to be discussed.

Additional Information

This course will include experience using the computer to analyze data. Laboratory sessions will be a part of the course. In the lab students will learn to use a statistical program called Minitab.