College of Science and Health
Elementary Statistics
Department of Mathematics
Dr. Eliana Antoniou
Course Syllabus

1. Title of Course, Course Number, Section and Credits:
   Elementary Statistics; Math 1300; 3 credits
   Dr. Eliana S. Antoniou
   Office: Science Hall 3409
   Phone No:
   (973) 720-3715
   E-mail address**:**
   antonioue@wpunj.edu
2. Description of Course:
   This course studies the development of statistical concepts with applications to various disciplines. Topics include descriptive and inferential statistical techniques. The latter are explained in terms of concepts from probability theory such as normal distribution, t-distribution, sampling theory, estimation, confidence intervals, hypothesis testing, t-test, Chi square test, analysis of variance and regression and correlation.
3. Course Prerequisites:
   None
4. Course Objectives:
   The objective is to acquaint the non-science student with the basic principles of statistics. Great effort will be made on emphasizing the role of statistics in the disciplines of social sciences and health sciences.
5. Student Learning Outcomes:
   1. Students should effectively express themselves in statistical terms either in written or oral form.
   2. Demonstrate ability to think critically and effectively by utilizing statistical methods .
   3. Demonstrate ability to integrate knowledge and ideas in a coherent and meaningful manner
   4. Understand basic statistical methods;
   5. Apply statistical methods to application problems: set up the problem statistically, choose a suitable method;
   6. Perform statistical analysis, such as estimation, hypothesis testing, regression analysis and draw conclusions.
6. Tentative Topical Outline of Course (Sequence is NOT chronological):
   I. Introduction: 1st week
   - Graphical Methods

   II. Numerical Methods:
   - Measures of central tendency
   - Measures of variability
   - Measure of position

   III. Relationships between variables:
   Scatter plots, correlation and introduction to linear regression

IV. Introduction to Normal distribution — 2nd week
V. Sampling distribution, central limit theorem
VI. Inferences about mean (large sample and small sample)
- Confidence interval
- Testing hypotheses about mean

VII. Inferences about Means: (large samples and small samples)
- Confidence interval
- Difference between two means
- Paired samples and blocks

VIII. Inference about proportion(s) (one sample and two samples) — 3rd week
- Confidence interval
- Hypothesis Testing

IX. Chi-Square test
X. Analysis of Variances and Regression

7. Required Text:
Brase/Brase, Understanding Basic Statistics, 5th Edition, (Publisher: Brooks/Cole)

8. Homework and Tests :
Homework will be assigned for every section covered
There will be three tests based on two or three chapters

9. Grading Policy:
Grades will be based on homework, tests and a final exam using the following weights:
3 Exams (15% each): (45%)
Homework Assignments: (15%)
SPSS mini projects: (10%)
Final Exam (30 pts): 30%
Total: 100%

Your total score will be assigned a letter based on the following chart:
Grade Distribution:

A : 95-100	B+: 85-89	C+: 70-74	D+: 55-59	F: 0-50
A-: 90-94	B: 80-84	C: 65-69	D: 51-54	
	B-: 75-79	C-: 60-64		

10. Make-up Exams:
THERE WILL BE ABSOLUTELY NO MAKEUP EXAMS
In rare, unfortunate situations such as illness or death in the family, you are expected to notify me of your inability to take the exam immediately. In all cases, you must present legitimate, verifiable proof for missing the exam. Acceptable forms of proof are: doctor's certificate, police report and funeral home announcements. These proofs should clearly state the date, time and a phone number of the person providing them. Justification will only be granted in cases where **verification has been completed**. Under such circumstances, your score for the Final Exam will count towards the exam you missed.

11. **Disclaimer:**
The requirements and policies may be modified as circumstances dictate.