

Course Outline

STA 5507/4502: Nonparametric Statistics

Fall 2016

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Class Time and Place: Monday and Wednesday, 6:25 PM to 7:40 PM @ PC 419.

Office Hours: Monday and Wednesday, 3:30 PM to 5:00 PM or by appointment.

Prerequisite: A course in statistics.

Text: Practical Nonparametric Statistics (Third Edition) by W. J. Conover, Wiley (ISBN: 0-471-16068-7)



Course Description: In this course, the students will learn about various nonparametrical methods to analyze data. Topics will include tests for means, variances, randomness, distributional assumptions etc. We will cover selected topics from first six chapters of the text book. Time permitting, students will learn about density and survival function estimation is using nonparametric techniques. A detailed syllabus for this course is given below.

I. TESTS BASED ON THE BINOMIAL DISTRIBUTION

The Binomial Test and Estimation of p , The Quantile Test and Estimation of the p -th quantile, The Sign Test and its variations.

II. CONTINGENCY TABLES

The Median Test, Chi-squared Goodness of Fit test, Cochran's Test for Related Observations.

III. METHODS BASED ON RANKS

Wilcoxon Rank Sum Test, Wilcoxon Signed Rank Test, Kruskal-Wallis Test, Nonparametric Tests for Equality of Variances, Spearman's Rho, Kendall's Tau, Nonparametric Linear Regression, Friedman's Test for Block Designs.

IV. TESTS OF THE KOLMOGROV-SMIRNOV TYPE.

Kolmogrov Goodness of Fit test, Tests for Families of Distributions - Lilliefors Test and Shapiro-Wilk Test.

V. RUN TEST FOR RANDOMNESS

VI. SPECIAL TOPICS

Survival Function from Randomly censored data, kernel density estimation, Smooth estimation of the quantile, hazard and hazard rate function.

Note: A scientific calculator is required for this course.

Course Evaluation: Tentatively the grading scheme is as follows:

Assignments	20%
Midterm Exam II	20%
Midterm Exam III	20%
Final Exam	40%

Assignments: There will be about 5 assignments for this course. Computer software SPSS will be used for some of the assignment problems.

The *tentative midterm dates* are as follows:

The first midterm exam will be held on October 3 (Monday), 2015 and exam covers the materials until September 28 (Wednesday), 2016.

The second midterm exam will be held on November 9 (Wednesday), 2016 and exam covers the materials until November 7 (Monday), 2016.

The final exam is cumulative and will be held on December 5 (Monday), 2016 at ECS 136 between 5:00 to 7:00 PM. Students must bring a photo I.D. for each exam.

PS: You should not register in this class if your final exam conflicts with other course.

Note: Any complain about the grading of the midterm exams/ assignments have to be done within two weeks after the corresponding exam/assignment.

No make-up exam will be given, however, if an extenuating circumstance exists, please contact the instructor prior to the exam and receive permission to be absent and must arrange for taking a substitute test as soon as possible. All students are required to attend in the final exam. Failure to attend it will result in a grade of "F" for the course.

No extra work will be given to improve the grade.

Grading Scale: The weighted average of the scores in the three exams will be converted to a percentage. The following scale will then be used to assign letter grades for the course.

A (90% and +)	A- (87% to 89%)	B+ (84% to 86%)
B (80% to 83%)	B-(77% to 79%)	C+ (74% to 76%)
C (70% to 73%)	C-(67% to 69%)	D+ (64% to 66%)
D (60% to 63%)	D-(57% to 59%)	F (0% to 56%)

Home works: During the semester some problems will be assigned from text but will not be graded. Doing homework is strongly recommended. The answers for the odd number exercises can be found at the back of the text book.

Some Important Dates:

1. August 21 (Sunday), 2016: Last day to register without incurring a \$100 late registration fee.
2. August 22 (Monday), 2016: Classes Begin.
3. August 29 (Monday) 2016: Last day to add courses; last day to drop courses or withdraw from the University without incurring financial liability for tuition and fees Last day to change a grading option.
4. September 5 (Monday), 2016: Labor Day Holiday (University Closed)

5. September 16 (Friday) 2016: Last day to withdraw from the University with a 25% refund of tuition.
6. October 31 (Monday) 2016: Deadline to drop a course with a DR grade. Deadline to withdraw from the University with a WI grade.
7. November 11 (Friday) Veterans Day Holiday (University Closed).
8. November 24 & 25 (Thurs & Friday) 2016: Thanksgiving Holiday (University Closed).

9. Classes end on December 4 (Friday) 2016.

Note: The instructor is not responsible about the exact date or time or adding/dropping the course etc. Students must review FIU Academic Calendar 2014-2015 for the above dates.

Incomplete: The incomplete (I) grade will be given ONLY to a student who has completed the bulk of the course works and is unable to complete the course due to a serious interruption not caused by the student's own negligence.

Attendance: Students are expected to attend the classes regularly. If a student misses (or fails to attend) a class, it is his/her sole responsibility to obtain the missing information (for examples change of exam date, change of exam location, add/ omit some sections, class notes, new home works etc) from the Instructor or other students. Students are encouraged to seek the instructors help during office hours.

Note: The course outline provides a general plan/guide for the course only, however, deviation or some changes may be necessary. The instructor will assume the sole authority in all matters related to course content, students grading, and classroom procedures. No active beeper or cellular phones are allowed in classes. **You should not register in this class if your final exam conflicts with other course.**

Academic Misconduct: *Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.*