

STAT 3380 (A01)
An Introduction to Nonparametric Statistics
Fall 2013

Time:	MWF (12:30 pm - 1:20 pm)
Location	115 Armes
CRN	11360
Instructor	Dr. Zeny F. Mateo Office: 319 Machray Hall Phone: 474-6707 E-mail: zeny_mateo@umanitoba.ca
Office Hours:	Monday/Wednesday from 1:30 pm — 2:30 pm ; Tues 10:00 am – 11:00 am OR by appointment, please feel free to email me anytime.
Departmental Webpage	http://www.umanitoba.ca/statistics/ http://www.jump.umanitoba.ca/cp/home/displaylogin I will be making use of the JUMP portal in order to post announcements, some examples etc.. However, you will still be responsible for any other information given in class.
Textbook	Wayne W. Daniel “Applied Nonparametric Statistics”, 2 nd Edition, Brooks/ Cole, Duxbury Thomson Learning 1990 ISBN 0-534-38194-4 A copy of the textbook will be reserve in the Science Library.
Computer Package	The software <i>JMP</i> or <i>SPSS</i> will be used sometimes in this course to show the solution of some problems.
Marking Scheme	Assignments 15% Midterm Test 35% (1.5 hours, location TBA) Final Exam 50% (2 hours)
Reminders on Assignments	There will be six (6) assignments for the whole term. The first five (5) of which will count towards your final mark. All assignments are due in class before the lectures. All your assignments should be written on 8.5 X11 paper, using one side only and should be properly stapled at the left corner. Answer the questions in the given order. Late assignments will NOT be accepted .

Messy assignments or those with poor handwriting will be returned with a mark of “0”.

Test and Exam

The midterm test is tentatively scheduled for **Monday, October 25, 2013** (1.5 hours, location, TBA).

Please note that there will be no deferred test. So the weight of the Midterm test will be adjusted to the Final exam. Final examination will be scheduled by the University Registrar.

Reminders on Test and Exam

Non- programmable calculators are allowed
Formula sheet and statistical tables will be provided if required.

Academic Dishonesty

It is important that you understand what constitutes academic dishonesty and that you are familiar with the very serious consequences. Links to resources that describe academic dishonesty (including plagiarism, cheating, inappropriate collaboration and examination impersonation) can be found at:

<http://www.umanitoba.ca/faculties/science/student/webdisciplinedocuments.html> or through the Faculty of Science

home page at:

<http://www.umanitoba.ca/faculties/science>

Typical penalties imposed within the Faculty of Science for academic dishonesty are also described.

Voluntary Withdrawal Date

The voluntary withdrawal date is **November 13, 2013** by which time you will have received your marks for the midterm test and probably 3 assignments.

Course Outline:

- I. Introduction
- II. Review of Basic Statistics
 - (a) Some Important Terminology
 - (b) Hypothesis Testing
 - (d) Measurement Scales: Nominal, Ordinal, Interval, and Ratio
 - (e) Differences between parametric and nonparametric methods

- III. Procedures that utilize Data from a Single Sample
 - (a) Inferences about a Location Parameter
 - (b) Inferences about a Population Proportion Binomial Test
 - (c) One-Sample Runs Test for Randomness
 - (d) Cox-Stuart Test for Trend

- IV. Procedures that utilize Data from Two Independent Samples
 - (a) Making Inferences about the difference between two location parameters
 - (b) Making Inferences about the equality of two dispersion parameters.

- V. Procedures That Utilize Data From Two Related Samples
 - (a) Procedures for Testing Hypotheses about Location Parameters
 - (b) Confidence Interval Procedures for the Median Difference
 - (c) Test for Two Related Samples When Data Consists of Frequencies

- VI. Chi-Square Tests of Independence and Homogeneity
 - (a) Chi-square Test of Independence
 - (b) Chi-square Test of Homogeneity

- VII. Procedures that Utilize Data from Three or More Independent Samples
 - (a) Extension of the Median Test
 - (b) Kruskal-Wallis One-Way Analysis of Variance by Ranks

- VIII. Procedures that Utilize Data from Three or More Related Samples
 - (a) Friedman Two-way Analysis of Variance by Ranks

- IX. Rank Correlation and other Measures of Association
 - (a) Spearman Rank Correlation Coefficient
 - (b) Kendall's Tau

- X. Optional Topics
 - (a) Making Inferences about the Equality of Two Dispersion Parameters
Ansari-Bradley Test
 - (b) Point Biserial Coefficient of Correlation
 - (c) Durbin's Test for Incomplete block designs.
 - (d) Cochran's Test for Related Observations
 - (e) Test for Normality like Lilliefors test, Kolmorov-Smirnov test,
Goodness- of-fit Chi-square test