THE UNIVERSITY OF PRINCE EDWARD ISLAND
THE SCHOOL OF MATHEMATICAL AND COMPUTATIONAL SCIENCES
STAT 222 INTRODUCTORY STATISTICS II
Winter 2017

Course Instructor: George Jia
Class Room and Time: MCDH 243 T TH 8:30-9:45 AM
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General Information

This course builds upon the knowledge developed in Math 221 and introduces the following topics: 1) Hypothesis testing, 2) Two-population tests, 3) Chi-square tests, 4) ANOVA and ANCOVA, 5) linear regression analysis, 6) Nonparametric tests. All the topics will be reviewed with applied examples using MINITAB.

Reference Text

Reference book: ***Introductory Statistics, P.S. Mann, Wiley, 9th edition.*** Class hand-outs and additional class material will be distributed through Moodle.

Outline

1. One population hypothesis testing

    - Mean
    - Proportion
    - Variance
    - Power of the test

2. Two-population hypothesis testing

    - Mean
    - Proportion
    - Variance

3. Chi Square Tests

    - Proportions (using contingency table)
    - Independence between 2 categorical variables
    - Normality

4. Analysis of Variance

   - One-way ANOVA
   - Two-way ANOVA
   - Applications

5. Simple Linear Regression

   - Least squares estimation
   - Statistical Inference
   - Prediction

6. Introduction to Multiple Regression and ANCOVA

   - Linear regression with several independent variables
   - Testing significance of subset of variables
   - Application to analysis of covariance

7. Nonparametric Statistics

   - Wilcoxon rank-sum test
   - Signed-rank test for a paired experiment
   - Kruskal-Wallis test for a randomized design
   - Rank correlation coefficient

Course Evaluation

Evaluation consists of homework and two exams.

	Due date and time	weight
Homework		20%
Midterm 1	February during class	30%
Final	April during exam period	50%

 All the exams are cumulative (with emphasis on the material covered since the last examination). There will be no make-up midterm tests. In case a student misses a midterm due to sickness or other acceptable excuse the student must present an official document justifying the absence and the weight of that test will be added to the one of the final exam. In case of lack of justification for the absence a grade of zero will be attributed.

You are responsible for all contents covered in the lectures.

Questions about grades: If you have any questions about the grading of a homework, midterm or final exam, you may resubmit it to your instructor for re-grading. Please attach

a written note detailing the problem(s) which you would like re-graded, as well as explaining why you feel the grade should be changed. The entire homework (or midterm or final) will be re-graded, so it is possible that your score may go up or down.

Academic dishonesty: Academic dishonesty are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a academic dishonesty, at the following Web site: http://www.upei.ca/registrar/reg20