STAT 3000 A01
Applied Linear Statistical Models
Fall 2014

Instructor: Dr. Zeny F. Mateo

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Office Hours: M & W: 1:30 – 2:30; Tues 10:00 – 11:00, OR by appointment, please feel free to e-mail me anytime.

Web Page: For Posting Notes: http://www.umanitoba.ca/jump
JMP Download : http://www.stats.umanitoba.ca/download/jmp
Some information will be posted on the jump website for your convenience. It is not intended to be complete. You will still be responsible for any Information/announcement given in the class.

Textbook: *STAT2 Building Models for a World of Data by Cannon, Cobb, et. al.*. W.H. Freeman and Company. ISBN 1-4641- 4826-0

Reference: *Applied Linear Statistical Models with Student CD (Fifth Edition)* by M.H. Kutner, C.J. Nachtsheim, J. Neter and W. Li. McGraw Hill 2004.ISBN 0-07-310874-X
Student Solutions Manual is included in compact disk for use by students. The disc also includes all data set files from the text.

Computer Package: Statistical software packages are usually needed to perform the necessary calculations. We will use *JMP, which* can be downloaded to your computer to complete some questions in your assignments.

Assignments: There will be tentatively **5 assignments during the term.**
Assignments are due at the beginning of class on the day assigned.
All your assignments should be done on 8.5 x 11 paper using <u>one</u> side only.
Late assignments **WILL NOT BE ACCEPTED.**

Supplementary Problems: Throughout the course, there will be suggested exercises from the textbook for each Unit. These will not be handed in for marks but may be used on Midterm Test and Final Examination.

Test and Examination: There will be a Midterm test on Monday**, November 03, 2014 from 5:30 pm – 7:00 pm.** More details will be discussed in class. There will be a 2-hour final exam, which will be scheduled by the student records. It will cover all the lecture materials, but with emphasis on the second half. There will be **NO make-up midterm test. Students who miss the midterm with legitimate /valid reasons will carry the midterm weight (35%) to the final examination making the final examination weight (85%).** Selected Formula sheet and relevant Statistical tables will be provided in the Tests and

Final Exam if required. A non-programmable calculator is permitted and cell phones and other electronic devices are **strictly prohibited during the examination.**

Course Evaluation: Assignments: 15%
Term Test: 35%
Final Exam: 50%

Note that regardless of term marks, to obtain a grade of C or better, you must obtain at least 50% on the final examination.

Voluntary Withdrawal: The voluntary withdrawal date is **November 12, 2014** by which time you will have received your marks for the midterm test and probably 3 assignments.

Academic Dishonesty: You are expected to be familiar with what constitutes academic dishonesty and its consequences. Academic dishonesty is a serious offense and can be severe as suspension or expulsion from the University. More details of these terms and related issues are available at:
www.umanitoba.ca/science/undergrad/resources/webdisciplinedocuments.html

Course Contents: (Based on the text chapters)

1.   Linear Regression
Review of the Simple Linear Regression
Assessing Conditions
Transformations

2.   Inference for Simple Linear Regression
Inference for regression slope
ANOVA for regression
Regression and correlation
Intervals for predictions

3.   Multiple Regression
Multiple linear regression model
Assessing the model
New predictors from old
Techniques for choosing predictors

4.   Analysis of Variance
One –Way ANOVA
Assessing and using the model
Scope of Inference
Fisher's Least Significant Difference

5.   Multifactor ANOVA
Main Effects Model
Interaction in the Two-Way Model

6.   Overview of Experimental Design
             Comparisons and Randomizations
             Randomization F-test
             Blocking
             Factorial Crossing

Note: All course notes, assignments, tests, exams, practice exams and solutions are the intellectual property of your Instructor. Reproduction or distribution of these materials is strictly forbidden without the consent of the Department of Statistics.

2014–2015 REGISTRATION ADVISORY

Important Note from the Dean of Science:

It is your responsibility to ensure that you are entitled to be registered in this course. This means that you have:

- the appropriate prerequisites, as noted in the calendar description, or have permission from the instructor to waive these prerequisites;
- not previously taken, or are concurrently registered in, this course and another that has been identified as "not to be held with" in the course description. For example, STAT 3000 cannot be held for credit with STAT 3120, STAT 3130, STAT 3470 or STAT 3480.

The registration system may have allowed you to register in this course, but it is your responsibility to check. If you are not entitled to be in this course, you will be withdrawn, or the course may not be used in your degree program. There will be no fee adjustment. This is not appeal able. Please be sure to read the course description for this and every course in which you are registered.