Department of Mathematics & Statistics
Concordia University

STAT 360 (MATH 601), Sec. D
Linear Models
Fall 2017

Instructor*: _____

Office/Tel No.: _____

Office Hours: _____

*Students should get the above information from their instructor during class time. The instructor is the person to contact should there be any questions about the course.

Textbook: *Applied Linear Regression* Models, 4th Edition, by Kutner, Nachtsheim and Neter, McGraw Hill-Irwin, 2004.

Calculators: Only calculators approved by the Department (with a sticker attached as a proof of approval), such as **Sharp EL 531** or the **Casio FX 300MS**, available at the Concordia Bookstore, are permitted for the class test and final examination. See https://www.concordia.ca/content/dam/artsci/math-stats/docs/AppCalculatorList.pdf for a list of Approved and Not-Approved calculators.

Final Grade:
a) Assignments (12%)
b) Two mid-term tests (40%)
c) Final examination (48%)

If the grading scheme for this course includes graded assignments, a reasonable and representative subset of each assignment may be graded. Students will not be told in advance which subset of the assigned problems will be marked and should therefore attempt all assigned problems.

Important:
1) Please note that there is no"100%" final exam option in this course.
2) Mid-term test missed for any reason, including illness, cannot be made up. If you miss midterm because of illness (to be confirmed by a valid medical note), the final exam can count for 88% of your final grade.
3) Mid-term test I will be held on October 5, 2017 and the mid-term II will be held on November 2, 2017. These exams, as well as the final, will be closed book exams.
4) Please note that there are **no supplemental privileges** in this course.

Week	Sections	Topics to be covered
1	1.3, 1.6, 1.7, 1.8	Simple linear regression models; estimation of regression function; estimation of error term variance; normal error regression model.
2	2.1, 2.2, 2.4	Estimation of $ß_0$ and $ß_1$; interval estimation of E (Y_h).
3	2.5, 2.6, 2.7	Introduction to MINITAB, prediction of new observation; confidence band for regression line; ANOVA approach to regression analysis.
4	2.8, 2.9, 3.2	General linear test approach; coefficient of correlation; residuals.
5	3.3, 3.7 **MID-TERM I**	Diagnostics for residuals; F-test for lack of fit. **MID-TERM I** will cover material up to section 3.2.
6	4.1, 4.2	Joint estimation of $ß_0$ and $ß_1$; simultaneous estimation of mean responses.
7	4.3, 4.4, 5.6	Simultaneous prediction intervals for new observations; regression through origin; inverse of a matrix.
8	5.8, 5.9, 5.10	Random vectors and matrices; differentiation of a vector and scalar function of n x n matrix; simple linear regression model in matrix form. Least square estimation of regression parameters.
9	5.11, 5.12, 5.13 **MID-TERM II**	Fitted values and residual; ANOVA results; inferences in regression models. **MID-TERM II** will cover material from section 3.1 to section 5.10.
10	6.1, 6.2, 6.3	Multiple linear regression models; general linear regression model in matrix terms; estimation of regression coefficients.
11	6.4 - 6.7, 6.8, 6.9	Fitted values and residuals; ANOVA results; inferences about regression parameters; inferences about mean response and prediction of new observation; diagnostics and remedial measures.
12	7.1, 7.2, 7.3	Extra sum of squares; application of extra sum of squares; tests concerning regression coefficients.
13	7.4, 7.5, 7.6 **Review**	Coefficient of partial determination; standardized multiple regression models; multicollinearity and its effects.

Important Dates:

September 18	DNE Date: Academic withdrawal deadline (with tution refund)
September 18	Last day to add two-term and fall-term courses.
October 5	Mid-term test I
October 9	Thanksgiving day – University closed
November 6	DISC Date: Academic withdrawal deadline from fall-term Courses (without tuition refund)
November 2	Mid-term test II
November 21	Course evaluation released
November 27	Last day for instructor-scheduled tests or examinations
December 4	Last day of classes
December 5	Deadline to complete Course Evaluation

Important Information:

Topic	Link
Academic Integrity	Academic Integrity
Academic Integrity Quiz	How to take the quiz
Access Centre for Students with Disabilities	ACSD
Concordia Library Citation & Style Guides	Citing - Help & How-to
Final Exams Information	Final Exams

Academic Integrity and the Academic Code of Conduct
This course is governed by Concordia University's policies on Academic Integrity and the Academic Code of Conduct as set forth in the Undergraduate Calendar and the Graduate Calendar. Students are expected to familiarize themselves with these policies and conduct themselves accordingly. "Concordia University has several resources available to students to better understand and uphold academic integrity. Concordia's website on academic integrity can be found at the following address, which also includes links to each Faculty and the School of Graduate Studies: concordia.ca/students/academic-integrity." *[Undergraduate Calendar, Sec 17.10.2]*