Department of Mathematics & Statistics
Concordia University

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MATH 679C (MAST 881C)
Topics in Statistics & Probability
Fall 2015

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Instructor:	Dr. Lisa Kakinami, Office: LB 927-7 (SGW), Tel: (514) 848-2424, Ext. 3397
	Email: lisa.kakinami@concordia.ca
Time:	Thursdays, 18:00-20:15.
Location:	LB 915-4 (SGW).
Office Hours:	Wednesdays, 13:30-15:30.
Text:	The following text will be used extensively and is *recommended*: *Applied Longitudinal Analysis*, 2nd Edition, by Garrett Fitzmaurice, Nan Laird, and James Ware; John Wiley & Sons (2011).
Contents:	This course will introduce the techniques of longitudinal data analysis. Topics include subject-specific and population-averaged regression methods for longitudinal outcomes. Students will gain experience coding, analyzing, and interpreting longitudinal data using SAS.
Grading:	The final grade in the course will be based on the following scheme.

Assignments:	25%
Mid-term Examination:	40%
Project (written):	20%
Project (presentation):	10%
Participation:	5%

Week	Topics to be Covered
1	Course outline, introduction to longitudinal data analysis
2	Notation, historical perspective
3	Modeling the mean
4	Covariance structures
5	Linear mixed effects models
6	Linear fixed effects models
7	Diagnostics
8	**Midterm**
9	Generalized linear models
10	Marginal models
11	Generalized linear mixed effects models I
12	Generalized linear mixed effects models II
13	Advanced topics: Missing data, multilevel data