King Fahd University of Petroleum and Minerals
Department of Mathematics
STAT-513: Statistical Modelling (Term 212)

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Office Hours: will be announced later

Course Description: Simple and Multiple Linear Regression, Polynomial Regression, Splines, Generalized Additive Models, Hierarchical and Mixed Effects Models, Bayesian Modeling; Logistic Regression, Generalized Linear Models, Discriminant Analysis, Model Selection.

Textbook: A. Agresti. *Foundations of Linear and Generalized Linear Models*, Wiley (2015).

Supplementary Books:
- *Introduction to Linear Regression Analysis* by Montgomery, Peck and Vinning, 5th edition, Wiley (2012).
- *An Introduction to Statistical Learning with Applications in R* by G. James, D. Witten, T. Hastie and R. Tibshirani, Springerlink 2013.
- M.H. Kutner, C.J. Nachtsheim, J. Neter and W. Li (2005). *Applied Linear Statistical Models*. 5th edition, McGraw-Hill International.

Assessment*

Activity	Weight
Classwork (quizzes, assignments, attendance, bonuses, etc.)	10%
First Major Exam	20%
Second Major Exam	20%
Project	20%
Final Exam (Comprehensive)	30%

Important Notes:

Blackboard: All contacts or announcements between the instructor and the students are supposed to be through Blackboard, so the student must check his Blackboard at least once a day.

Academic Integrity: All KFUPM policies regarding ethics and academic honesty apply to this course.

Attendance Notes:
➢ In accordance with University rules, 20% unexcused absences will automatically result in a grade of DN.
➢ Attendance on time is very important. Mostly, attendance will be checked within the first five minutes of the class. Entering the class after that, is considered as one late, and every two times late equals to one absence.

Tentative list of Course Contents to be covered:

Statistical Learning
Simple Linear Regression
Multiple Linear Regression
Polynomial Regression
Linear and Non-Linear Spline Fitting
LOGIT and PROBIT models
Poisson Regression
Generalized Linear Models
Model Building Techniques
Bayesian Modeling
Non-Linear Regression