Applied Statistics and Data Analysis - Course Syllabus

Course Number: AMCS 110

Course Title: Applied Statistics and Data Analysis

Academic Semester:	Spring	**Academic Year:**	2015/ 2016
Semester Start Date:	Jan, 24, 2016	**Semester End Date:**	May, 19, 2016

Class Schedule: Sunday/Wednesday 9:00 AM -10:30 AM

Classroom Number:

Instructor(s) Name(s): Ying Sun
Email: ying.sun@kaust.edu.sa

Teaching Assistant name:
Email:

Office Location: B1 Room 4116

COURSE DESCRIPTION FROM PROGRAM GUIDE

Provides fundamentals of probability and statistics for data analysis in research. Topics include data collection, exploratory data analysis, random variables, common discrete and continuous distributions, sampling distributions, estimation, confidence intervals, hypoThesis tests, linear regression, analysis of variance, two (2)-way tables, and data analysis using statistical software. No degree credits for AMCS majors.

COMPREHENSIVE COURSE DESCRIPTION

Provides fundamentals of probability and statistics for data analysis in research. Topics include data collection, exploratory data analysis, random variables, common discrete and continuous distributions, sampling distributions, estimation, confidence in- tervals, hypothesis tests, elementary simulation and bootstrapping, distribution-free techniques, linear regression, analysis of variance, two-way tables, and data analysis using statistical software.

GOALS AND OBJECTIVES

For AMCS students wishing to obtain an introduction to statistical method.

REQUIRED KNOWLEDGE

Calculus

REFERENCE TEXTS

Tamhane, A. C. and Dunlop, D. D. (2000) Statistics and Data Analysis: From Elementary to Intermediate. Prentice Hall: Upper Saddle River, NJ. ISBN: 0-1374-4426-5 (Required)

Hayter, A. J. (2012) Probability and Statistics for Engineers and Scientists, 4th edition, ISBN: 1111827044. (Optional)

Dalgaard, P. (2008) Introductory Statistics with R. Springer Science and Business Media. ISBN: 978-0-387-79053-4. (Optional)

METHOD OF EVALUATION

Percentages %	Graded content
30% **35%** **35%**	**Homework,** **Exam** **Final project.** **Grades will be posted on the course website.**

COURSE REQUIREMENTS

Assignments

Homework will complement the work in class, generally due every other Wednesday. No late homeworks accepted unless prior arrangements have been made. Staple the pages together (we are not responsible for lost pages). Submit the problems in order, making sure that the computer output and discussion is placed together. Do not put the computer output at the end of homework; raw output is not acceptable. Make it clear what parts of the output are relevant and show how they answer the questions posed. You are encouraged to work together on the homework, but collaboration with classmates is strictly limited to discussing problems, not writing them up or sharing R code.

Course Policies

Students who miss homeworks or exams should expect a grade of zero on that assignment. Your grade on any homework or exam may be disputed only within 48 hours of receiving the graded exam. If you are unable to take an exam or complete an assignment on time due to circumstances beyond your control, please e-mail me within 24 hours for appropriate arrangements. If you know ahead of time that you will have a university excused absence, homework assignments are due before you leave, and exams will be made up after you return.

NOTE
The instructor reserves the right to make changes to this syllabus as necessary.