COURSE OUTLINE
AB1202 Statistics & Analysis

A) Course Aims

This course introduces the concepts and methods of statistical inferences: the process of inferring unknowns based on collected data. Students of this course will also learn basic programming skills to conduct statistical analyses in the R environment

This course consists of three main modules. Module 1 introduces elements of probability theory. Module 2 covers the method of statistical inferences. Module 3 introduces two applications of statistical inferences, linear regression and simulation analysis. Each weekly topic will be supplemented with relevant computer applications in the R environment.

B) Intended Learning Outcomes (ILO)

By the end of this course, you (as a student) should be able to:
1. Relate the theory of statistical inferences to business applications
2. Run simulation and regression analyses
3. Use R to conduct statistical analysis and interpret the results

C) Course Content

Module 1: Elements of probability
- Understand probability
- Conditional probability and statistical independence
- Random variables and probability distributions
- Expectations

Module 2: Statistical inferences
- Sampling and sampling distribution
- Confidence interval (CI)
- Null hypothesis statistical testing

Module 3: Simulation and Regression analysis
- Regression analysis and variable coding
- Conduct simulation analysis in the R environment

D) Assessment (includes both continuous and summative assessment)

Component	Weight	Team/Individual
1. Individual participation	10%	Individual
2. Computer Quizzes	60%	Individual
3. E-Learning and tests	20%	Individual
4. Presentation	10%	Individual
Total	100%	

E) Planned Weekly Schedule

Week #	Topic
0	Course briefing session
1	Probability basics
2	Counting methods, Conditional probability
3	Random variables (RV) and distribution function
4	Expectations
5	Bivariate distributions and correlation
6	Sampling distributions
7	Central Limit Theory
	RECESS WEEK
8	Confidence intervals
9	Hypothesis testing
10	Regression analysis I
11	Regression analysis II
12	Simulation analysis
13	Revision (no lesson)
14	Group assignment due