BA-6933 Statistics & Quantitative Methods: In Person Section to Hybrid Course, 8:00 am to 5:30pm Given by: J. Lizardi.

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This class is an introduction to basic statistical theory and its business applications intended for graduate students. The use of statistics as a decision-making tool and the various methods used to summarize, analyze, and interpret data will be covered.

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TODAYS SCHEDULE:

- 8am-9am: Bring your own breakfast/coffee - set up, Q & A
- 9am to 12pm: **Statistics & Quantitative Methods Review**
  - Morning Attendance & Introductions
  - Review Chapters 1 -17 from Modern Business Statistics with Microsoft Excel
- 12pm to 1:30pm: **Lunch, Networking/Socializing, Free time**
  - Lunch
  - Questions
  - 1 on 1 meetings about Grades, Assignments Quizzes
- 1:30pm to 2pm : **Lab Setup**
  - After Lunch Attendance
  - R and Python Statistical Tools IntroductionWhat is Python?
    - What is R? What is Python? How are they used for Statistics?
    - How to Install Python
    - How to Install R
- 2pm to 5:30pm: **Case Studies**
  - Develop and use Statistical Models to solve Business Problems.
    - **Multiple Regression Analysis**
    - **Logistic Regression Analysis**
    - **Time series Models and Forecasting Methods**
  - Closing Attendance

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TODAYS TOPICS :

Chapters 1 -17 from Modern Business Statistics with Microsoft Excel

The High Level Overview:
1) What is Statistics
2) Applications in Business and Economics
3) Data Sources
4) Analytics
5) Big Data and Data Mining
6) Ethical Guidelines for Statistical Practice

Descriptive Statistics:
7) Univariate analysis, Bivariate and Multivariate analysis in Excel

Probability & Random Variables:
8) Introduction to Probability
9) Random Variables Expected Value and Variance
10) Continuous & Discrete Probability Distributions

Inferential Statistics:
11) Sampling, Sampling Distributions & Sampling Methods
12) Hypothesis Testing & Interval Estimation
13) Tests of Goodness of Fit, Independence, and Multiple Proportions

Prediction Classification and Forecasting:
14) Experimental Design & ANOVA
15) Linear Regression
16) Time Series Analysis and Forecasting
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Analysis Steps:

Linear & Logistic Regression Analysis:
1. Data exploration & preparation
2. Model fitting
3. Assumption checking
4. Feature selection
5. Prediction, Classification
6. Model evaluation
7. Model selection

Time Series Analysis:
1. Data exploration & preparation
2. Assumption checking
3. Model selection
4. Model fitting
5. Forecasting
6. Model evaluation

Resources:
Startups Dataset: R&D Spend, Administration, Marketing Spend, Profit
Direct Marketing Campaigns Dataset
Monthly Orders - Demand Forecasting Data Set
https://w ww.anaconda.com/products/distribution
Rstudio.com