SUBJECTS AND TOPICS - MBA IN DATA SCIENCE AND ANALYTICS

KNOWLWDGE TESTS

1. ANALYTICS AND MACHINE LEARNING UNSUPERVISED MODELS

- Clustering;
- Hierarchical Grouping Methods;
- Non-Hierarchical Grouping Methods (K-Means);
- PCA (Principal Component Analysis);
- Simple Correspondence Analysis;
- Multiple Correspondence Analysis.

2. ANALYTICS AND MACHINE LEARNING SUPERVISED MODELS: OLS ESTIMATION

- Simple and Multiple Linear Regression Models;
- Nonlinear Regression Models and Box-Cox Transformation;
- Qualitative Explanatory Variable and Dummy Variables;
- Diagnostic for Regression Models: Normality of Residuals, Multicollinearity and Heteroscedasticity;
- Stepwise Procedure.

3. ANALYTICS AND MACHINE LEARNING SUPERVISED MODELS: MAXIMUM LIKELIHOOD ESTIMATION

- Binary Logistics Models;
- Multinomial Logistics Models;
- Regression Models for Count Data (Poisson and Negative Binomial);
- Zero-Inflated Models;
- Multilevel Models.

4. ANALYTICS AND ADDITIONAL MACHINE LEARNING MODELS

- Decision Trees;

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- Ensemble Models;

- Bagging and Random Forests;

- Boosting;

- Neural Networks;

- Deep Learning.

5. DIVERSE TECHNIQUES FOR ANALYTICS AND DATA PROCESSING

- Statistics Fundamentals I;

- Data Wrangling;

- Data Collection: Crawlers and Web Scraping;

- Text Mining, Sentiment Analysis and NLP;

- Social Network Analysis;

- Operational Research and Optimization and Simulation Modeling I;

- Time Series;

- Analytics and Risk Management.

INTERPRETATION TEST

6. DATA SCIENCE & ANALYTICS MANAGEMENT

- Digital Transformation;

- Agile Methodologies;

- Regulation for the Digital Environment;

- Business Intelligence;

- Information Technology and Technological Innovation.