SYLLABUS

Course	362018 - Fundamentos de Estatística e Métodos Quantitativos I (Principles of Statistics and Quantitative Methods I)		
WorkLoad	30 hours	**Credits**	2 credits
Level	Master and PhD		
Type	Mandatory		
Concentration Area	Logistics, Operation and Transportation Planning		
Professor	Alan Ricardo da Silva (alansilva@unb.br)		
Semester	2020/1 (August 17th 2020 to December 18th 2020)		
Class Meetings	Monday: 2:00 PM – 3:50 PM		
Location	SG-12 PPGT team at Microsoft Teams		
Course Objective	The objective of this course is presenting basic concepts of statistics and quantitative methods, preparing the student for the use of techniques usually adopted in the treatment and data analysis.		
Teaching Method	Theoretical classes for presentation of programmatic content, and resolution of exercises in the classroom.		
Program	**1.** Introduction 1.1 - General considerations 1.2 - Population and sample 1.3 - Variables **2.** Descriptive Statistic 2.1 - Statistical data 2.2 - Graphical presentation 2.3 - Frequency distribution 2.4 - Measures of central tendency 2.5 - Measures of variability and dispersion 2.6 - Box-plot **3.** Probability 3.1 - Sample space and events 3.2 - Probability and its properties 3.3 - Random variables **4.** Probability Distributions 4.1 - Discrete distributions 4.2 - Continuous distributions **5.** Sampling and Estimation 5.1 - Sampling techniques 5.2 - Sample distribution 5.3 - Estimator and estimate 5.4 - Point estimation 5.5 - Interval estimation 5.6- Sample size for a simple random sample **6.** Hypothesis Testing 6.1 - Basic concepts 6.2 - Comparison between two means **7.** Categorical Data Analysis 7.1- Association and strength of the association 7.2- Association for categorical data **8.** Correlation and Regression		
Evaluation Criterion	**1 – EVALUATION** The student's use will be evaluated through:		

Exam 1 (Content: items 1,2 and 3 of the program);
Exam 2 (Content: items 4 and 5 of the program);
Exam 3 (Content: items 6, 7 and 8 of the program);

The exams are going to be of the multiple choice (10 questions) in the same time of the virtual classes (2:00 PM – 3:50 PM). The answers could be submitted to a google forms or to "Aprender3" environment, or even by email.

2 – FINAL SCORE

Arithmetic mean of the 3 exams: FS=(Exam1+Exam2+Exam3)/3

3 – CONDITIONS FOR APPROVAL

To be approved, the student must meet all the following conditions related to:

- get FS $\geq$ 5.0;
- get frequency $\geq$ 75%.

The presence of the students is going to be recorded by the presence in the virtual class at Microsoft Teams.

4 – FINAL GRADE

The final grade will be assigned in accordance with the following criterion:

Grade	Final Score (FS)
SS	FS $\geq$ 9.0
MS	7.0 $\leq$ FS $\leq$ 8.9
MM	5.0 $\leq$ FS $\leq$ 6.9
MI	3.0 $\leq$ FS $\leq$ 4.9
II	0.1 $\leq$ FS $\leq$ 2.9
SR	FS = 0.0

Bibliography

1. ZAR, Jerrold H. *Biostatistical Analysis*. Pearson, fifth edition, 2010.

2. . WASHINGTON, Simon P., KARLAFTIS, Matthew G., MANNERING, Fred L. *Statistical and Econometric Methods for Transportation Data Analysis*. CRC Press, second edition, 2010.

2. BARBETTA, Pedro Alberto. Estatística Aplicada às Ciências Sociais. 5ª Edição Revisada. Florianópolis: Editora da UFSC, 2004.

3. BUSSAB, Wilton de O., MORETTIN, Pedro A. Estatística Básica. 5ª Edição. São Paulo: Saraiva, 2002.

4. COSTA NETO, Pedro L. de Oliveira. Estatística. 18º Reimpressão. São Paulo: Editora Edgard Blücher, 2000.

5. FARIAS, Alfredo A. de, SOARES, José F., CÉSAR, Cibele Comini César. Introdução à Estatística. 2ª Edição. Rio de Janeiro: LTC – Livros Técnicos e Científicos Editora S.A., 2003.

6. SILVA, Nilza Nunes da. Amostragem Probabilística – Um Curso Introdutório. São Paulo: EDUSP – Editora da Universidade de São Paulo, 2001.

Brasília, August 17th 2020.

Prof. Alan Ricardo da Silva