

Syllabus for ET 101 - Introduction to Statistics 2018 *** UFPE

1. Instructor Information

Instructor: *Hélio Magalhães de Oliveira*
Docteur ENST Paris, <http://www.de.ufpe.br/~hmo/deOliveira.html>
Email: hmo AT [de.ufpe.br](mailto:hmo@de.ufpe.br)
room: 319 (DE, 2.floor)
Phone Number: +55 (81) 2126-7426
Tuesday: Statistics 1 (Engineering / T8) -> 08h00 - 10h00
Tuesday: Statistics 1 (Engineering / T1) -> 10h00 - 12h00
Thursday: Statistics 1 (Engineering / T1) -> 08h00 - 10h00
Thursday: Statistics 1 (Engineering / T8) -> 10h00 - 12h00

complete list:

Dr Aldo William Medina Garay T5
Terça: Estatística 1 (Engenharias/T5) -> 08h00 - 10h00
Quinta: Estatística 1 (Engenharias/T5) -> 10h00 - 12h00

Dra Caliteia Santana de Sousa T4, T6
Terça: Estatística 1 (Engenharias/T4) -> 10h00 - 12h00
Terça: Estatística 1 (Engenharias/T6) -> 08h00 - 10h00
Quinta: Estatística 1 (Engenharias/T4) -> 08h00 - 10h00
Quinta: Estatística 1 (Engenharias/T6) -> 10h00 - 12h00

Dr Hélio Magalhães de Oliveira T1, T8
Terça: Estatística 1 (Engenharias/T8) -> 08h00 - 10h00
Terça: Estatística 1 (Engenharias/T1) -> 10h00 - 12h00
Quinta: Estatística 1 (Engenharias/T1) -> 08h00 - 10h00
Quinta: Estatística 1 (Engenharias/T8) -> 10h00 - 12h00

Dr Vinícius Quintas Souto Maior T2, T7
Terça: Estatística 1 (Engenharias/T7) -> 08h00 - 10h00
Terça: Estatística 1 (Engenharias/T2) -> 10h00 - 12h00
Quinta: Estatística 1 (Engenharias/T2) -> 08h00 - 10h00
Quinta: Estatística 1 (Engenharias/T7) -> 10h00 - 12h00

2. General Course Information

THIS IS A BASIC COURSE FOR GENERAL EDUCATION FOR ENGINEERING. STUDENTS LEARN HOW TO SUMMARIZE DATA AND HOW TO MAKE APPROPRIATE DECISIONS BASED ON DATA.

3. Short Course Description

ET 101 is an introductory course that assumes no prior knowledge of statistics but does assume some knowledge of high school algebra and calculus. Basic statistical concepts and methods are presented in a manner that emphasizes understanding the principles of data collection and analysis. There are two major parts to this course: *Probability Theory* (unit 1 and 2) and principles of *Statistical Inference* (unit 3).

4. Week Topics Covered

Unit I : Paul Mayer

- Sets. Random experiment. Sample space. Events. Relative Frequency. Probability definitions
- Principle of inclusion-exclusion. Finite Sample Spaces. Enumeration Methods
- Conditional Probability. Bayes' Theorem. Total Probability Theorem. Independent Events
- Discrete and Continuous One-Dimensional Random Variables. Discrete Two-dimensional Random Variables. Distributions of Marginal Probability, Independent Random Variables.

Unit II : Paul Mayer and Mongomey&Runger

- Expected value. Expected Value of Random Variable Function. Properties of the Expected Value. Variance. Variance of Random Variable Function, Properties of Variance
- Correlation. Discrete Random Variables: Bernoulli and Binomial Distributions, Geometric Distribution, Pascal
- Hypergeometric. Poisson distributions, Poisson's theorem. De-Moivre-Laplace Theorem
- Continuous Random Variables: Uniform Distributions, Normal Distribution, and t-student

Unit III : Bussab and Morettin/Marcília et al.

- Exploratory Data Analysis: Frequency Distributions, Position and Dispersion Measures. Box-plot
- Population and Sample. Simple Random Sampling. Definitions of Statistics and Parameters. Estimation of Parameters. Estimator Properties
- Point Estimators for Mean, Standard Deviation and Proportion. Central Limit Theorem. Sample Mean and Proportion. Distributions of Sample
- Confidence Intervals for Mean (known and unknown variance) and for Population
- Hypothesis Testing. Formulation. Type I and Type II Errors
- Tests for Mean (known and unknown variance) and Population

5. Course Objective

The primary goal of the course is to help students analyzing and interpreting data so as to find answers to real problems of engineering.

6. Course Assessment

Exam 1	33.33%
Exam 2	33.33%
Exam 3	33.331%

To find your grade, use the following formula. $Grade = \{(Exam1)+(Exam2)+(Exam3)\}/3$

7. Course Websites

main reference

http://www.de.ufpe.br/~hmo/introducao_a_estadistica.html

8. Online Exam Dates

03/04	1st exam	3a
10/05	2nd exam	5a
21/06	3rd exam	5a
28/06	replacement	5a
06/07	final exam	6a