S Y L A B B U S C O U R S E		
Introduction to Probability Prof. Dr. Carlos Eduardo da Gama Torres	Hours 30h Semester: Summer course	Credits 2 Prerequisite: Basic Calculus

OVERVIEW:

Introduction to Probability intends to provide the student with some basic results of statistics necessary for further advanced study. Topics covered in the course include basics: probability, random variables and probability distributions, mathematical expectation, discrete probability distributions and continuous probability distributions.

METHODOLOGY
Theoretical classes;
Exercise resolution

RESOURCES
Framework;
Datashow
Statistical softwares

PROGRAM CONTENT:

Sample space and events. Sampling point counting. Probability of an event. Conditional Probability. Bayes Rule. Random variables. Distributions of discrete probabilities. Distributions of continuous probabilities. Joint probability distribution. Average of a random variable. Variance and covariance of random variables. Mean and variance of linear combinations of random variables. Chebyshev's theorem. Discrete uniform distribution. Binomial and multinomial distributions. Hypergeometric distribution. Negative and geometric binomial distribution. Poisson distribution and the Poisson process. Continuous uniform distribution. Normal distribution. Normal binomial approximation. Gamma and exponential distributions. Chi-square distribution. Log-normal distribution. Weibull distribution.

GRADING

Resolution of exercise lists (Value: 3 points) 1 Individual exam (Value: 7 points). The minimum frequency of 75% will be observed. The student should obtain for approval concept minimum 6.0.

REFERENCES

BASIC

WALPOLE, R, E.; MYERS, R,H.; MYERS S, L.;YE, K**. Probabilidade e estatística para engenharia e ciências**. São Paulo: Pearson Prentice Hall, 2009.

CASELLA, G; BERGER, L, R. **Inferência Estatística**. São Paulo: Cencage Learning, 2010.

ROSS, S. **Probabilidade - Um Curso Moderno com Aplicações**. 8ª Ed, Bookman, 2010.

COMPLEMENTARY

HOFFMANN, R. **Estatística para Economistas**. 4 ed. São Paulo: Cengage Learning, 2006.

KAZMIER, L. J. **Estatística Aplicada à Administração e Economia**. 4 ed. Porto Alegre: Bookman, 2007.

DOANE, D. P.; SEWARD, L. E. **Estatística Aplicada à Administração e a Economia**. São Paulo: McGraw-Hill, 2008.

SPIEGEL, M. R.; STEPHENS, L. J. **Estatística**. 4 ed. Porto Alegre: Bookman, 2009.

CHUNG, K, L.; AITSAHLIA, F. **Elementary Probability Theory with Stochastic Processes and an Introductio to Mathematical Finance**. 4th edition , Springer –Verlag, 2003.

HOGG, R,V.; TANIS, E, A**. Probability and Statistical Inference**. Pearson Prentice Hall, 2010.

VERZANI, J. Using R for Introductory Statistics. Chapman & Hall/CRC, 2 ed, 2014.