UNIVERSIDADE FEDERAL DO CEARÁ

FEDERAL UNIVERSITY OF CEARÁ
OFFICE OF THE VICE PROVOST FOR UNDERGRADUATION (PROGRAD)
COORDINATION FOR PROJECT AND CURRICULUM DEVELOPMENT
CURRICULUM DEVELOPMENT DIVISION

1. Academic unit offering the curricular component (Faculty, Center, Institute, Campus)**:**

Center of Technology

2. Department offering the curricular component (when applicable)**:**

Teleinformatics Engineering Department

3. Undergraduate course(s) offering the curricular component

Code of the Course	Name of the Course	Course Degree[1]	Curriculum (Year/ Semester)	Nature of the Component[2]	Semester of Offer[3]	Habilitation[4]
91	Telecommunications Engineering	Bachelor	2015.1	Mandatory	02	-

4. Name of the curricular component:
Statistics for Engineers

5. Code of the curricular component (filled by PROGRAD)**:**
TI0111

6. Prerequisites	No (x)	Yes ( )	
		Code	Name of the curricular component / activity

7. Corequisite	No (x)	Yes ( )	
		Code	Name of the curricular component / activity

8. Equivalences	No ( )	Yes (x)	
		Code	Name of the curricular component / activity
		TI0048	Probabilistic Models for Engineers

9. Day period of the curricular component (more than one option can be selected)**:**
(x) Morning (x) Afternoon (x) Night

1 **Fill with *Bachelor (Engineer), Licenciate,* or *Technologist.***
2 **Fill with *Mandatory, Optional,* or *Elective.***
3 **Fill when mandatory.**
4 **When elective, fill with the habilitation or emphasis to which the curricular component is linked.**

10. Regime of the curricular component:

(x) Semester ( ) Yearly ( ) Modular

11. Justificatory for the creation/regulamentation of this curricular component

The majority of the telecommunications engineering areas has as scientific, technological and professional foundation the observation, understanding, modeling, control, and application of stochastic events. This implies a deep and solid formation on probabilistic concepts applied to signals, telecommunication networks and systems, as well as statistical measurements, building the basis for the study of random phenomena widely used in the area.

12. Objectives fo the curricular component:

Provide the student the fundamentation, understanding, and domain over the usage of probabilistic models and of statistical measurements and tests over continuous and discrete random variable functions in the context of engineering.

13. Syllabus:

Random experiment: samples, spaces, probability axioms. Conditional probability. Random variables. Continuous and discrete probability distributions. Functions of random variables. Joint distributions. Expected value. Estimation. Hypothesis test: mean, variance, proportion. Adherence tests, homogeneity and independency. Linear regression and correlation. Multilinear regression.

14. Workload description

Number of Weeks:	Number of Credits:	Total Workload in Hours:	Theory Workload in Hours:	Practice Workload in Hours:
16	04	64	64	-

15. Basic bibliography:

1- Willian W. Hines, Douglas C. Montgomery, David M. Goldsman and Connie M. Borror. Probabilidade e Estatística na Engineering LTC, 2006.

2- Murray R. Spiegel, John Schiller, and R. Alu Srinivasan. Probabilidade e Estatística. Coleção Schaum. Bookman Companhia Ed., 2004.

3- José Paulo A. Albuquerque, José Mauro Pedro Fortes and Weiler A. Finamore, Probabilidade e Variáveis Aleatórias e Processos Estocásticos, Editora PUC-Rio, 2008.

16. Complementary bibliography:

1- Steven Kay. Intuitive Probability and Random Processes using MATLAB, Springer, 2006.

2- Athanasios Papoulis. Probability, Random Variables and Stochastic Processes. (Electrical & Electronic Bacheloring Series). McGraw-Hill International, 3rd edition, 1991.

3- T. T. Soong. Fundamentals of Probability and Statistics for Bachelors. John Wiley & Sons, 2004.

4- Charles W. Therrien and Murali Tummala. Probability and Random Processes for Electrical and Computer Bachelors, CRC Press, 2nd edition, 2011.

5- Alberto Leon-Garcia. Probability and Random Processes for Electrical Bacheloring. Addison-Wesley, 2nd edition, 1994.