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:
Digital Circuits

5. Code of the curricular component (filled by PROGRAD)**:**
TI0110

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
TI0045	Digital Circuit Design

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

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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

Course of fundamental importance to understand, design, and analyze modern digital systems. Electric-electronic telecommunications equipement have as basic principles the theoretical and practical concepts that are lectured in this course.

12. Objectives fo the curricular component:

Provide introductory and essential knowledge on the theory and practice of digital circuits.

13. Syllabus:

Number systems; logic gates/functions and boolean algebra; combinational circuits; flip-flop and related devices; digital arithmetics: operations and circuits; logic circuit families; counters and registers; binary counters: types, frequency divider; memory: types, expansion, access time; analog/digital converters.

14. Workload description

Number of Weeks:	Number of Credits:	Total Workload in Hours:	Theory Workload in Hours:	Practice Workload in Hours:
16	04	64	48	16

15. Basic bibliography:

1- Lecture notes

2- TOCCI, R.; WIDMER, N. S.: Sistemas Digitais. Princípios and Aplicações. Livros Técnicos e Científicos. 10th edition, 2007.

3- ERCEGOVAC, M.; Lang, T.; Moreno, J.H., Introdução aos Sistemas Digitais, Bookman, 2000.

4- WAKERLY, John F., Digital Design: Principles and Practices, 4th edition, Prentice Hall, 2005.

5- TAUB, H, Circuitos Digitais and Microprocessadores. São Paulo: Editora McGraw-Hill do Brasil, 1984.

16. Complementary bibliography:

1- YARBROUGH, John M., Digital Logic: Applications and Design, PWS Publishing Company, 1997, Boston.

2- MANO, Morris; CILETTI, Michael D., Digital Design. Prentice-Hall, 5th edition, 2012.

3- LALA, Parag K., Practical Digital Logic Design and Testing, Prentice Hall, 1996, New Jersey.

4- ROTH Jr, Charles H., KINNEY, Larry L.; Fundamentals of Logic Design, Cengage Learning, 7th edition, 2013.

5- MANO, M.M; C.H. KLIME: Logic and Computer Design Fundamentals. 4th edition;

Prentice-Hall. 2007.