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 | 01 | - |

**4. Name of the curricular component:**
Introduction to Computer Programming

**5. Code of the curricular component** (filled by PROGRAD)**:**
TI0109

| **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 |
| | | TI0044 | Programming Techniques for Engineers I |
| | | CK0108 | Fundamentals of Computer Programming |

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

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.**

(x) Morning (x) Afternoon (x) Night

**10. Regime of the curricular component:**

(x) Semester ( ) Yearly ( ) Modular

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

Computers became fundamental tools for the work in the science and engineering domains. Often, software packages used in engineering applications are programable, thus turning the understanding of computer programming logic into an essential topic for the formation of future engineers. Besides that, in many occasions engineers are required to develop (program) their own computational tools, so that learning a general purpose computer programming language also became essential in the engineering formation.

**12. Objectives fo the curricular component:**

This course has a main objective to introduce computer programming logic to the students, as well as introduce them to a general purpose computer programming language. Besides these topics, basic concepts of computer architecture and number systems are also approached.

**13. Syllabus:**

Introduction to computer science. Number systems. Primitive data types. Operators. Flow control structures. User-defined data types. Memory management. Functions. I/O systems. Algorithms. Applications in Telecommunications Engineering.

**14. Workload description**

| Number of Weeks: | Number of Credits: | Total Workload in Hours: | Theory Workload in Hours: | Practice Workload in Hours: |
|---|---|---|---|---|
| 16 | 04 | 64 | 32 | 32 |

**15. Basic bibliography:**


1- C: Como Programar, Paul Deitel and Harvey Deitel, 6a Ed., Pearson, 2011.

2- C++: Como Programar, Paul Deitel and Harvey Deitel, 5ª. Ed., Pearson, 2006.

3- Fundamentos da Programação de Computadores, Ana Fernanda G. Ascencio and Edilene Aparecida V. de Campos, 3rd edition, Prentice-Hall, 2012.


**16. Complementary bibliography:**


1- C++ How to Program, Paul Deitel and Harvey Deitel, 8a Ed., Pearson, 2012.

2- Lógica de Programação; André Luís Forbellone and Henri Eberspacher; 3ª. Ed.; Pearson, 2005.

3- Introduction à Programação – Do Algoritmo às Linguagens Atuais; Severino Paiva; 1ª. Ed.; Ciência Moderna, 2008.

4- Algoritmos e Lógica de Programação; Marco A. Furlan de Souza, Marcelo M. Gomes, Márcio V. Soares and Ricardo Concilio; 2ª. Ed.; Cengage; 2011.

5- Java: Como Programar; Paul Deitel and Harvey Deitel; 8ª. Ed.; Pearson, 2010.