



# 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 <sup>1</sup>	Curriculum (Year/Semester)	Nature of the Component <sup>2</sup>	Semester of Offer <sup>3</sup>	Habilitation <sup>4</sup>
91	Telecommunications Engineering	Bachelor	2015.1	Mandatory	01	-

**4. Name of the curricular component:**

Introduction to Engineering and to the Scientific Method

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

TI0108

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
		TI0046	Introduction to Engineering

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

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

<sup>1</sup> Fill with *Bachelor (Engineer), Licenciante, or Technologist.*

<sup>2</sup> Fill with *Mandatory, Optional, or Elective.*

<sup>3</sup> Fill when mandatory.

<sup>4</sup> When elective, fill with the habilitation or emphasis to which the curricular component is linked.

**10. Regime of the curricular component:** Semester Yearly Modular**11. Justificatory for the creation/regulamentation of this curricular component**

The main component of the learning mechanism is *motivation*, the desire to learn more to better understand facts and plan life. Using an accessible language, this course aims to awake in the initiating students the curiosity and desire of learning. During the course the student will have a first contact with the main problems and challenges faced in the courses that compose the curricular grid. In this way, the student can start, from the beginning, to develop a self identification process with the areas that compose the course and their relations with the society.

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

The course has as main objectives introduce to the student: the concept and history of engineering, the formation at undergraduate level in telecommunications engineering, their areas of action and a general vision of their subareas, discussing qualitatively the main concepts inherent to the applications in the job market. Moreover, some lectures by invited academic and industry professionals enrich the course and the relationship between university and the non-academic job market.

**13. Syllabus:**

Introduction; history of engineering and telecommunications; scientific method and technology; engineering: concepts and practices – areas of action, job market; professional, social, environmental, national and international relations; formation of the engineer; curriculum of the engineer; curriculum of the telecommunications engineer – concepts of telecommunication systems and networks.

**14. Workload description**

Number of Weeks:	Number of Credits:	Total Workload in Hours:	Theory Workload in Hours:	Practice Workload in Hours:
16	02	32	32	-

**15. Basic bibliography:**

- 1- Lecture notes.
- 2- Introdução à Engenharia – Conceitos, Ferramentas and Comportamentos; Walter Antonio Bazzo and Luiz Teixeira do Vale Pereira, Ed. da UFSC, 2006;
- 3- A Formação do Engenheiro Inovador – Uma Visão Internacional, Marcos Azevedo da Silveira, PUC-Rio, Sistema Maxwell, [www.maxwell.lambda.ele.puc-rio](http://www.maxwell.lambda.ele.puc-rio), 2005.

**16. Complementary bibliography:**

- 1- Introdução à Engenharia; Holtzapple / Reece; 1ª. Edição; LTC, 2006.
- 2- Fundamentos de Metodologia Científica; Marina de Andrade Marconi and Eva Maria Lakatos; 7ª. Edição; Editora Atlas, 2010.
- 3- Fundamentos de Metodologia – Um Guia para a Iniciação Científica; Aidil Jesus Paes de Barros and Neide Aparecida de Souza Lehfeld; 2ª. Edição; Makron Books, 2000.

- 4- Metodologia Científica; Amado L. Cervo, Pedro A. Bervian and Roberto da Silva; 6ª. Edição; Pearson / Prentice Hall, 2006.
- 5- Metodologia para a Pesquisa e Desenvolvimento; Carlos Fernando Jung; 1ª. Edição; Axcel, 2004.