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)**:**

Electrical 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 | 06 | - |

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

**5. Code of the curricular component** (filled by PROGRAD)**:**
TH0230

**6. Prerequisites** — No ( ) — Yes (x)

| Code | Name of the curricular component / activity |
|---|---|
| TI0114 | Electric Circuits |
| | |

**7. Co-requisite** — No (x) — Yes ( )

| Code | Name of the curricular component / activity |
|---|---|
| | |
| | |

**8. Equivalences** — No ( ) — Yes (x)

| Code | Name of the curricular component / activity |
|---|---|
| TH0167 | Electrical Installations |
| | |

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

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

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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.**

(x) Semester ( ) Yearly ( ) Modular

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

Professionally prepare engineering students by providing theoretical knowledge to enable them to analyze basic projects involving residential and building electrical installations.

**12. Syllabus:**

Basic concepts of electricity; schemes: single-line, multi-line and functional; command and lighting device; load forecasting and division of circuits for electrical installations; electric power supply; dimensioning of electrical installations; grounding; protection.

**13. Program:**

**Unit I** - Understanding alternating current; electrical quantities; Ohm's laws; Kirchhoff laws; Serial / parallel circuit; power and electric energy; inductive and capacitive single phase circuits; single phase circuits; power factor correction; understanding three phase circuits.
**Unit II** - Schemes: single-line, multi-line and functional.
**Unit III** - Installation of lamps, simple switches and sockets; install parallel and intermediate switch.
**Unit IV** - Lighting load forecast and sockets according to NBR 5410/2004; switchboard; division of the installation into terminal circuits; dimensioning of electrical conductors.
**Unit V** - NT 001 - COELCE; terminology; supply limits; general conditions of supply; measurement and protection; own generation.
**Unit VI** - Electric shock; earth taking; types of grounding; protective grounding components; grounding conductor section.

**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- CAVALIN, Geraldo. Instalações elétricas prediais. 18a ed., Editora: Érica, 2006.

2- GUSSOW, M. Eletricidade Básica. 2a ed., Coleção Schaum. Editora: Bookman, 2009.

3- COELCE. NT 001. Fortaleza: Coelce, 2008, 49p.


**16. Complementary bibliography:**


1. CREDER, Hélio. Instalações elétricas. 15a ed., Rio de Janeiro: Livros Técnicos e Científicos, 2007.
2. EDMINISTER, J. Circuitos Elétricos. 2a ed., Coleção Schaum. Editora: Bookman, 2005.
3. NISKIER, Julio. Instalações elétricas. Colaboração de Archibald Joseph Macintyre. 5a ed., Rio de Janeiro: Livros Técnicos e Científicos, 2008.
4. COTRIM, Ademaro Alberto Machado Bittencourt. Instalações elétricas. 5a ed., ed. São Paulo: Pearson, 2008.