DESENHO DE ESQUEMAS E QUADROS ELÉTRICOS

Code: 322028

Main Scientific Area: Tecnologic innovation

Lecturer: AntÃ³nio Pedro Ferreira da Silva

Language of Instruction: Portuguese

Regime: S1

Contact Hours: 60h Total Workload: 108h

ECTS: 6,0

Objectives

This course aims to provide students with fundamental knowledge for planning and wiring diagrams project, starting with an approach to major general and cross-cutting concepts for an individualized study of electrical panels and circuit boards. That students understand the main standards, components and technical development of electrical schematics , and for each type to be able to describe, analyze and optimize circuits , in addition to producing the respective documentation. All as possible, the study it is based on case studies of real application -oriented problem solving in the areas of design , operation, commissioning and electrical schematics project.

Learning Outcomes

At the end of the chair students should be able to:1. Analyze , scale , and draw correctly electrical equipment and their respective circuits .
2. Develop work tools using the drawing software 2D and 3D (CAD).
3. Implement certification of a technical manual QE.
4. To understand the functioning of the key components of electrical and electronic circuits.
5. To understand the operation and manufacture of a PCB.
6. Specify and synthesize printed circuits.

7. Design electrical and electronic circuits.

Course Contents

Introduction:

Legislation;

Encapsulation ;

Active Components;

Passive Components;

Types of conductors;

Buses;

Connection terminals;

Labeling;

Electrical Board Design;

3D Layout of Electronic PCB

Testing and certification

Recommended Bibliography

Resumo Norma 61439.

Manual RTIEBT.

Documentação do formador das Sessões realizadas (PPT).

SEGURANÇA EM QUADROS ELÉCTRICOS E AS NOVAS REGRAS TÉCNICAS - Schneider.

SOLUÇÕES DE PROTECÇÃO E DISTRIBUIÇÃO DE POTÊNCIA - Hugo Madeira Legrand.

Hager -DOMOVEA_AR

Recursos didáticos:

Compudatores pessoais;

Software de Desenho de Esquemas Elétricos;

Software de Desenho de Placas de Circuito Impresso;

Learning and Teaching Methods

The various topics covered consist of the fundamental concepts of electrical schematic drawings.

After the introduction of RULES AND REGULATIONS to be applied in the production of electrical panels,

in item two will be approached wiring and its nomenclature, graphical representation and specifications.

in item three, the active and passive equipment will be approached using technical symbols and capsulated structures.

with regard to the item Electrical Design and 3D Layout of Drawing Electrical Design, will be realized schemes with the use of digital tools.

in the item Domótica, will be approached the processes of design, dimensioning and production of Intelligent circuits.

Finally, it deals with the concretion of the final project of the installation idealized by the trainee and the realization of all the electrical / electronic schemes to be implemented.

Assessment Methods

Croos-curricular skills be assessed by observatios and appropriate grid recording, as well as the assessment of cognitive skills throug pratical work and final design

Projeto Interdisciplinar

Avaliação Contiua / Projeto Individual

Apresentação e defesa do projeto final

Frequência

Aulas teóricas

Frequência

aulas práticas

Participação

Interação Desempenho

ISO14001 Ambiental

Iso

9001-2015

Aplicação das RTIEBT

Aplicação das 61439

Protecção contra contatos direto e contatos iindiretos

Dimensionamento de Caixas modulares para electrificação de quadros lectricos

Normas e cores a aplicar nas cablagens

Desenho técnico dos Circuitos

IP

IK

Classificação dos locais

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C. C

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