



# Course guide

## 230365 - PCBD - Printed Circuit Board Design

Last modified: 24/05/2024

**Unit in charge:** Barcelona School of Telecommunications Engineering  
**Teaching unit:** 710 - EEL - Department of Electronic Engineering.

**Degree:** MASTER'S DEGREE IN ELECTRONIC ENGINEERING (Syllabus 2013). (Optional subject).  
MASTER'S DEGREE IN TELECOMMUNICATIONS ENGINEERING (Syllabus 2013). (Optional subject).  
MASTER'S DEGREE IN ELECTRONIC ENGINEERING (Syllabus 2022). (Optional subject).

**Academic year:** 2024    **ECTS Credits:** 2.5    **Languages:** English

### LECTURER

**Coordinating lecturer:** Consultar aquí / See here:  
<https://telecos.upc.edu/ca/estudis/curs-actual/professorat-responsables-coordinadors/responsables-assignatura>

**Others:** Consultar aquí / See here:  
<https://telecos.upc.edu/ca/estudis/curs-actual/professorat-responsables-coordinadors/professorat-assignat-idioma>

### TEACHING METHODOLOGY

Theoretical lectures  
Laboratory sessions  
Team assignments (at home)

### LEARNING OBJECTIVES OF THE SUBJECT

Learn the PCB design basic concepts  
Be able to design a medium complexity PCB

### STUDY LOAD

Type	Hours	Percentage
Hours small group	16,0	25.60
Self study	42,5	68.00
Hours large group	4,0	6.40

**Total learning time:** 62.5 h



## CONTENTS

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### Basic PCB concepts

**Description:**

PCB elements: Base, Tracks, Vias  
PCB requirements: Electrical and mechanical  
PCB fabrication process  
PCB Stack-Up  
PCB design from schematic to Gerber files

**Full-or-part-time:** 16h

Theory classes: 8h  
Self study : 8h

### PCB design tutorial

**Description:**

Simple PCB design tutorial using the KiCad application

**Full-or-part-time:** 12h

Laboratory classes: 6h  
Self study : 6h

### Medium complexity PCB design project

**Description:**

A medium size PCB project will be developed.  
Students will work out the project from the circuit specifications.

**Full-or-part-time:** 34h 30m

Laboratory classes: 6h  
Guided activities: 22h 30m  
Self study : 6h

## GRADING SYSTEM

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Development and delivery of PCB design projects

## BIBLIOGRAPHY

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**Basic:**

- Coombs, Clyde F. Printed circuits handbook. 7th. ed. McGraw-Hill, 2016. ISBN 9780071833950.