

Introduction to Digital Systems

Course Presentation

2025/2026

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Introduction to Digital Systems

- Scientific area
 - Architecture of computing systems
- Courses
 - Computer and Informatics Engineering, Electrical and Computer Engineering, Industrial Automation Engineering
- Contact hours
 - 2h lectures + 2h labs
- ECTS credits
 - 6
- Code
 - 40332

The number of ECTS credits assigned to a course **does not indicate how many hours of classes you will have**. Instead, it **indicates the expected number of hours to study**.

1 ECTS = 25-30 hours of study. 6 ECTS = 150-180 hours of study.

The semester has ~ 15 weeks => you must study at least **10 hours per week**.

These hours include: lectures, labs, book reading, exercise solving, exam study, etc.

Assessment

- Final classification is obtained from two mutually exclusive alternatives:
 - **Continuous assessment** (default) during the TP and lab classes (a personal laptop computer with simulation software is required):
 - 3 TP tests (20%, 20%, 20%) + 2 simulation problems (20%, 20%).
 - **Final exam**: TP test + simulation problems
- The assessment method is **continuous** by default but might be altered to **final** during the first two weeks of the semester
- For approval, the total weighted average must be ≥ 9.5
- No minimal grades on assessment components

Repeaters

- Positive grades obtained in the various assessment components in the academic year 2024/2025 are not maintained.

Student Absences

- **Attendance at lectures is strongly encouraged**, but is not considered compulsory. There will be **no record of absences in TP classes**.
- In ordinary regime, the **practical classes are of compulsory attendance**.
- In accordance with the current study regulations, all students who, not having a working student status, inexcusably miss **more than 20% of practical classes**, will be **reproved** automatically and will not be allowed to participate in subsequent evaluations during the current academic year.
- The proper documentation of the illness, injury, or other reason must be submitted to DETI secretariat within the stated deadlines. In parallel, and as early as possible, the student should send a copy of the justification to the respective teacher.

Working Students

- Working students who have not been able to attend regular classes during the semester, will have their final exam(s) during the exam season, in January.

Teachers

- Leader:
 - Adão Silva
- Lectures:
 - Adão Silva and Augusto Silva
- Labs:
 - Adão Silva, António Navarro, Augusto Silva, Fábio Coutinho, José Luis Cura, Pedro Rito, Luis Nero, Guilherme Campos.

Tutorial guidance (OT)

- OTs sessions will take place on Thursdays in room 23.2.11 between 7-8pm. The OT will only operate if there is at least 1 student enrolled. Registration for the OT must be completed in the e-learning system up to 24 hours before the OT, that is, by 7pm on Wednesday of each week.
- Students are strongly invited to contact their practical class teachers for explanations or other support for self study.

Bibliography

- J.F. Wakerly, *Digital design: Principles and Practices*, 4th ed, Prentice-Hall, 2006 / 5th edition, Pearson, 2018
- J. Deschamps, E. Valderrama, L. Téres, *Digital Systems, from Logic Gates to Processors*, Springer, 2017.
- M. Dias, *Sistemas Digitais, Princípios e Prática*, 3^a ed, FCA, 2013
- M. Mano, M. Ciletti, *Digital Design*, 4th ed, Prentice-Hall, 2006
- T. Floyd, *Sistemas Digitais: fundamentos e aplicações*, 9^a edição, Bookman, 2007
- A. Amaral, *Eletrónica Digital, Fundamentos e Projeto*, Edições Sílabo, 2019

Course website: elearning.ua.pt

- Objectives
- Support materials for theoretical classes
- Lab guides
- Teachers' contacts
- Course software
- Assessment
- Bibliography
- Etc.

The screenshot shows a sidebar menu on the elearning.ua.pt website. The menu items are:

- Placard** (with a red circular icon containing a white right arrow)
- Informação Base da UC** (with a blue circular icon containing a white down arrow)
- Dossiê pedagógico** (with a blue PDF icon)
- OTs - 5ª-feira 19h-20h** (with a blue chain link icon)
- Lista de Docentes** (with a blue notepad icon)
- Declaração Trabalhador Estudante** (with a blue PDF icon)

Below the 'Informação Base da UC' section, there is a 'Generic Info' section with the following text:

As OTs só funcionarão desde que os alunos apareçam nos primeiros 15 minutos da sessão.

Não haverão OTs na 1ª semana de aulas (começam em 26/set).

Full reading of the teaching dossier is mandatory!

Welcome to the world of digital design!

Have good time studying!

Remember:

6 ECTS = 4h of classes + 6h of homework