

# Introduction to Digital Systems

Course Presentation  
2022/2023

Arnaldo Oliveira, Augusto Silva, Iouliia Skliarova



# 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

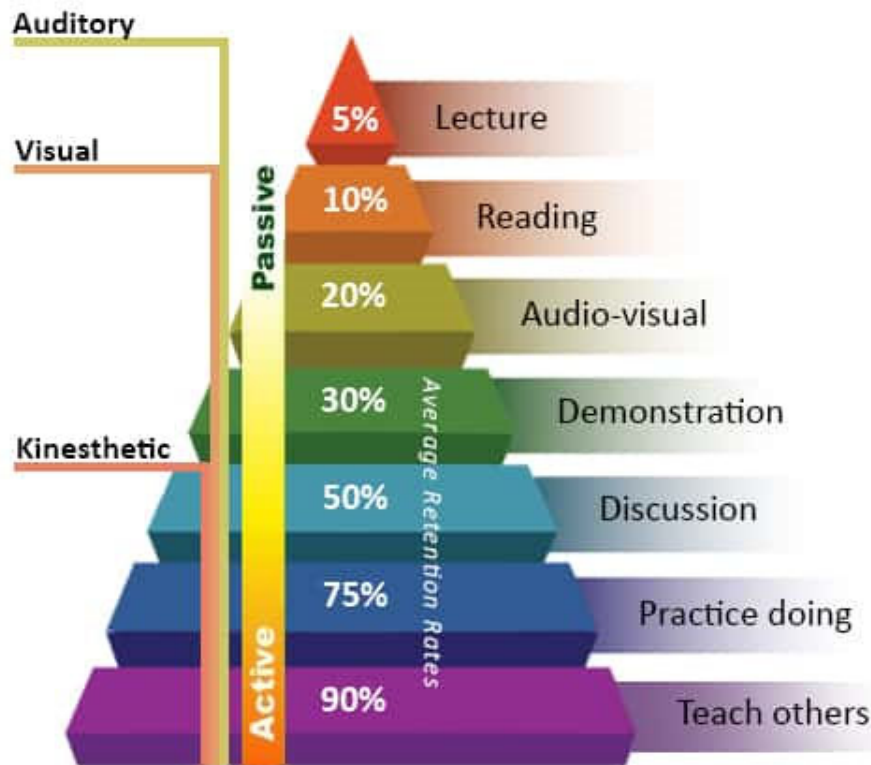
The number of ECTS credits assigned to a course **does not indicate how many hours of classes you will have**. Instead, it **indicates the expected number of hours to study**.

**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.

# Learning Pyramid



Adapted from the NTL Institute of Applied Behavioral Science Learning Pyramid

Image source: <https://www.educationcorner.com/the-learning-pyramid.html>

**Kahoot!**

**slido**

**INTEL® QUARTUS® PRIME**  
Development Suite



**slido**



**De que distrito de Portugal é?**

ⓘ Start presenting to display the poll results on this slide.

# 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%, 25%, 25%) + 2 simulation problems (10%, 15%) + participação ativa nas aulas TP (5%)
  - **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  $\geq 9.5$
- No minimal grades on assessment components

# Repeaters

- Positive grades obtained in the various assessment components in the academic year 2021/2022 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**. Student presence might be registered informally.
- 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 lab classes during the semester, will have their final exam(s) during the exam season, in January/February.



# Teachers

- Leader:
  - Iouliia Skliarova
- Lectures:
  - Augusto Silva, Iouliia Skliarova
- Labs:
  - Adão Silva, Augusto Silva, Iouliia Skliarova, José Luis Cura, Manuel Violas, Vinícius Oliveira

# Student Consultation

- Mode: distance learning (*zoom*)
- 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*, 4<sup>th</sup> ed, Prentice-Hall, 2006 / 5<sup>th</sup> edition, Pearson, 2018
- J. Deschamps, E. Valderrama, L. Téres, *Digital Systems, from Logic Gates to Processors*, Springer, 2017
- M. Mano, M. Ciletti, *Digital Design*, 4<sup>th</sup> ed, Prentice-Hall, 2006
- T. Floyd, *Sistemas Digitais: fundamentos e aplicações*, 9<sup>a</sup> edição, Bookman, 2007
- A. Amaral, *Eletrónica Digital, Fundamentos e Projeto*, Edições Sílabo, 2019
- M. Dias, *Sistemas Digitais, Princípios e Prática*, 3<sup>a</sup> ed, FCA, 2013

# 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 with the following items:

- FÓRUM** (Anúncios)
- Placard** (Aqui é colocada informação e anúncios sobre a UC Introdução aos Sistemas Digitais (por ordem cronológica decrescente). As aulas de ISD têm início efetivo na terça-feira, 20/set/2022.)
- Informação Base da UC** (Generic Info)
  - FICHEIRO** (Dossiê pedagógico)
  - URL** (OTs - 5ª-feira 19h-20h)

As OTs só funcionarão desde que os alunos apareçam nos primeiros 15 minutos da sessão.  
Não haverá OTs na 1ª semana de aulas e durante as férias de Natal.
  - PÁGINA** (Lista de Docentes)
  - FICHEIRO** (Declaração Trabalhador Estudante)
- Aulas Teórico-Práticas** (Não disponível)
- Aulas Práticas**

**Full reading of the teaching dossier is mandatory!**

# Welcome to the world of digital design!

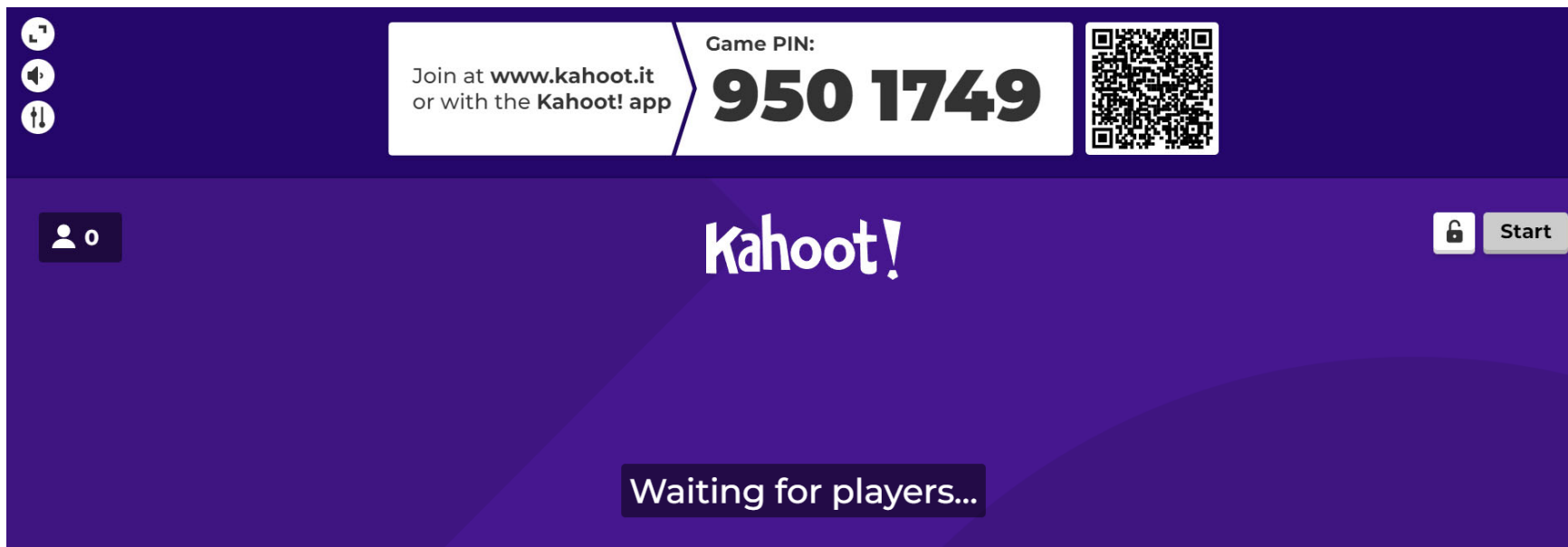
Have good time studying!

Remember:

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

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# Test 1



The screenshot shows the Kahoot! game lobby interface. At the top, there are three icons: a square with a smaller square inside, a speaker, and a person with a plus sign. Below these icons, a white box contains the text "Join at [www.kahoot.it](http://www.kahoot.it) or with the Kahoot! app". To the right of this box, the text "Game PIN:" is followed by the large number "950 1749". Further right is a QR code. In the center of the screen, the word "Kahoot!" is written in a large, white, stylized font. To the left of "Kahoot!" is a dark blue box with a white person icon and the number "0". To the right of "Kahoot!" is a grey button with a lock icon and the text "Start". At the bottom center, a dark blue box contains the text "Waiting for players...".

# Feriado e substituições

- Aula 27/set -> sala 23.1.6 (prof. Augusto Silva)
- Aula 28/set -> sala 3.1.15 (prof. Augusto Silva)
- Feriado de 05/out
  - **7/out, sexta-feira > 13h**
  - 10/out, segunda-feira > 18h
  - 6/out, quinta-feira > 18h