Introduction to Digital Systems

Course Presentation

2020/2021

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Introduction to Digital Systems

- Scientific area
  - Architecture of computing systems
- Courses
  - Computer and Telematics Engineering, Electronic and Telecommunications 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.

Evaluation

- All the evaluation components will be computer based.
- A personal laptop computer with simulation software is required.
- Final classification is obtained through **two mutually exclusive alternative paths**
  - **Continuous evaluation** (default) with 5 components obtained during the Lab classes:
    - **3 TP tests (20%, 25%, 30%) + 2 Simulation problems (10%, 15%)**
  - **Final Exam**: A global TP test + Simulation problems
- Students are required to choose one of the alternative evalution modes up to 2 weeks after the course start up.
- To pass the course: Grade > 9,5
- Students with Grade < 9,5 at the regular season are automatically enrolled for the extra season final exam.

Repeaters

- Repeating students who have obtained a positive grade in the practical component of the course in 2019/2020 (in the regular examination season) can maintain their grade and it will correspond to 40% of the final grade.
- Repeaters who have enrolled, through PACO, in one of the practical classes, automatically lose their practical grade obtained previously.

Student Absences

- Attendance at lectures is strongly encouraged but is not considered compulsory. There will be **no official record of absences in TP classes**. Student presence will informally registered.
- In ordinary regime, the **practical classes are of <u>compulsory</u> attendance**.
- In accordance with the current study regulations, all students who, not having a working student status, inexcusably miss **more than 3 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:
  - Augusto Silva
- Lectures:
  - Augusto Silva, Iouliia Skliarova
- Labs:
  - António Navarro, António Sousa Pereira, Augusto Silva, Iouliia Skliarova, Guilherme Campos

Tutorial Periods

- Schedule: TBA
- Teacher: Prof. António Sousa Pereira - f185@ua.pt
- Mode: Distance Learning
- 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
- J. Deschamps, E. Valderrama, L. Téres, *Digital Systems, from Logic Gates to Processors*, Springer, 2017
- M. Mano, M. Ciletti, *Digital Design*, 4th ed, Prentice-Hall, 2006
- Z. Kohavi, Niraj K. Jha, *Switching and Finite Automata Theory*, Cambridge Univ. Press, 2009
- M. Dias, Sistemas Digitais, Princípios e Prática, 2ª ed, FCA, 2011

Course website: elearning.ua.pt

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

Full reading of the teaching dossier is mandatory!

Welcome to the world of digital design!

Have a good time studying!

Remember:

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