Course guide
340369 - INCO-I1O01 - Introduction to Computers

Last modified: 17/05/2023

Unit in charge: Vilanova i la Geltrú School of Engineering
Teaching unit: 701 - DAC - Department of Computer Architecture.

Degree: BACHELOR'S DEGREE IN INFORMATICS ENGINEERING (Syllabus 2018). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 7.5 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: Sanchez Lopez, Sergio

Others: Asensio García, Adrián

PRIOR SKILLS

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REQUIREMENTS

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DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
2. CE2. Basic knowledge of use and programming computer, operating systems, data base and informatic programs with engineering applications.
3. CEFB4. Basic knowledge of use and computer programming, as well as of operating systems, data base and generally informatic programs with engineering applications.
4. CEFC9. Ability to know, understand and assess computer structure and architecture, as well as basic components forming them.
5. CEFB6. Adequate knowledge of the concep of business, institutional and legal framework of company. Organization and Management.

Transversal:
1. EFFECTIVE USE OF INFORMATI0N RESOURCES - Level 1. Identifying information needs. Using collections, premises and services that are available for designing and executing simple searches that are suited to the topic.

TEACHING METHODOLOGY

The middle group classes will be made using the available means in the classrooms (slates, multimedia equipment) and are based on the oral presentation of the contents on the subject matter of study (expository method). In some cases, there will be lectures based on the participation and intervention of the student through short activities in the classroom, such as direct questions or the resolution of problems related to the theoretical exposition exposed

LEARNING OBJECTIVES OF THE SUBJECT

Understand and design the combinational and sequential digital circuits for designing a simple computer, based on the SISP-1-1 and SISP-1-2 processors.

- Understand the SISA-1 machine language and assembler

STUDY LOAD

Type	Hours	Percentage
Hours large group	45,0	24.00
Hours small group	30,0	16.00
Self study	112,5	60.00

Total learning time: 187.5 h

CONTENTS

1. Introduction

Full-or-part-time: 13h 12m
Theory classes: 1h 45m
Practical classes: 2h
Laboratory classes: 1h 45m
Self study : 7h 42m

2. Combinational circuits. Logic gates (NOT,AND, OR XOR)

Full-or-part-time: 22h 48m
Theory classes: 2h 45m
Practical classes: 4h
Laboratory classes: 2h 45m
Self study : 13h 18m

3. Combinational blocks for basic arithmetic operations with natural numbers

Full-or-part-time: 13h 12m
Theory classes: 1h 45m
Practical classes: 2h
Laboratory classes: 1h 45m
Self study : 7h 42m

4. Integer numbers and combinational blocks for integer numbers

Full-or-part-time: 13h 12m
Theory classes: 1h 45m
Practical classes: 2h 45m
Laboratory classes: 1h
Self study : 7h 42m

5. Sequencial logic circuits

Full-or-part-time: 27h 28m
Theory classes: 2h 45m
Practical classes: 4h
Laboratory classes: 2h 45m
Guided activities: 3h
Self study : 14h 58m

6. Especial-purpose processors

Full-or-part-time: 18h
Theory classes: 2h 15m
Practical classes: 3h
Laboratory classes: 2h 15m
Self study : 10h 30m

7. General-purpose Processing Unit(GPU)

Full-or-part-time: 17h 50m
Theory classes: 2h 10m
Practical classes: 3h
Laboratory classes: 2h 10m
Self study : 10h 30m

8. Input/output and memory

Full-or-part-time: 22h 48m
Theory classes: 2h 45m
Practical classes: 4h
Laboratory classes: 2h 45m
Self study : 13h 18m

9. Control Unit of SISP-I

Full-or-part-time: 16h 12m
Theory classes: 1h 45m
Practical classes: 2h
Laboratory classes: 1h 45m
Guided activities: 3h
Self study : 7h 42m

10. Introducction to Operating Systems

Full-or-part-time: 9h 36m
Theory classes: 1h
Practical classes: 2h
Laboratory classes: 1h
Self study : 5h 36m

GRADING SYSTEM

Mid-term test *0.2 + exercises*0.2 + Lab*0.2 + periodic test*0.1 + final test*0.3 >= 5

revaluation:final test

EXAMINATION RULES.

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BIBLIOGRAPHY

Complementary:

- Patterson, David A.; Hennessy, John L. Computer organization and design : the hardware/software interface. 6th ed. Oxford, GB: Morgan Kaufmann, 2021. ISBN 9780128201091.