

## 340369 - INCO-I1001 - Introduction to Computers

Coordinating unit:	340 - EPSEVG - Vilanova i la Geltrú School of Engineering		
Teaching unit:	701 - AC - Department of Computer Architecture		
Academic year:	2019		
Degree:	BACHELOR'S DEGREE IN INFORMATICS ENGINEERING (Syllabus 2018). (Teaching unit Compulsory) BACHELOR'S DEGREE IN INFORMATICS ENGINEERING (Syllabus 2010). (Teaching unit Compulsory)		
ECTS credits:	7,5	Teaching languages:	Catalan, Spanish

### Teaching staff

Coordinator:	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 INFORMATION 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



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### Study load

Total learning time: 187h 30m	Hours large group:	45h	24.00%
	Hours medium group:	0h	0.00%
	Hours small group:	30h	16.00%
	Guided activities:	0h	0.00%
	Self study:	112h 30m	60.00%

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### Content

<p>1. Introduction</p>	<p>Learning time: 13h 12m            Theory classes: 1h 45m            Practical classes: 2h            Laboratory classes: 1h 45m            Self study : 7h 42m</p>
<p>2. Combinational circuits. Logic gates (NOT,AND, OR XOR)</p>	<p>Learning time: 22h 48m            Theory classes: 2h 45m            Practical classes: 4h            Laboratory classes: 2h 45m            Self study : 13h 18m</p>
<p>3. Combinational blocks for basic arithmetic operations with natural numbers</p>	<p>Learning time: 13h 12m            Theory classes: 1h 45m            Practical classes: 2h            Laboratory classes: 1h 45m            Self study : 7h 42m</p>
<p>4. Integer numbers and combinational blocks for integer numbers</p>	<p>Learning time: 13h 12m            Theory classes: 1h 45m            Practical classes: 2h 45m            Laboratory classes: 1h            Self study : 7h 42m</p>
<p>5. Sequential logic circuits</p>	<p>Learning time: 27h 28m            Theory classes: 2h 45m            Practical classes: 4h            Laboratory classes: 2h 45m            Guided activities: 3h            Self study : 14h 58m</p>

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<p>6. Especial-purpose processors</p>	<p>Learning time: 18h Theory classes: 2h 15m Practical classes: 3h Laboratory classes: 2h 15m Self study : 10h 30m</p>
<p>7. General-purpose Processing Unit(GPU)</p>	<p>Learning time: 17h 50m Theory classes: 2h 10m Practical classes: 3h Laboratory classes: 2h 10m Self study : 10h 30m</p>
<p>8. Input/output and memory</p>	<p>Learning time: 22h 48m Theory classes: 2h 45m Practical classes: 4h Laboratory classes: 2h 45m Self study : 13h 18m</p>
<p>9. Control Unit of SISP-I</p>	<p>Learning time: 16h 12m Theory classes: 1h 45m Practical classes: 2h Laboratory classes: 1h 45m Guided activities: 3h Self study : 7h 42m</p>
<p>10. Introduccion to Operating Systems</p>	<p>Learning time: 9h 36m Theory classes: 1h Practical classes: 2h Laboratory classes: 1h Self study : 5h 36m</p>

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### Qualification system

Mid-term test \*0.2 + exercises\*0.2 + Lab\*0.2 + periodic test\*0.1 + final test\*0.3  $\geq$  5

revaluation:final test

### Regulations for carrying out activities

### Bibliography

#### Complementary:

Patterson, David A.; Hennessy, John L. Computer organization and design : the hardware/software interface. 5 th. Burlington [etc.]: Elsevier Morgan Kaufmann, 2014. ISBN 9780124077263.