	COURSE: PROGRAMMING (2018-2019)		
	DEGREE: Bachelor´s Degree in Energy Engineering	**YEAR: 1**	**TERM: 1**

WEEKLY PLANNING

WEEK	SESSION		DESCRIPTION	GROUPS (mark X) LECTURES	GROUPS (mark X) COMPUTER LAB	2 Teachers Session	WEEKLY PROGRAMMING FOR STUDENT DESCRIPTION	WEEKLY PROGRAMMING FOR STUDENT CLASS HOURS	WEEKLY PROGRAMMING FOR STUDENT HOMEWORK HOURS
1	1		**Course Overview:** • Presentation, programme, bibliography, tutorials, didactic materials, planning of the subject… • Summary of the **UNIT 1** (Introduction to computer science and programming) and **UNIT 2** (Software and Hardware).	X		NO	• Reading Docent Guide • Reading Chapter 14 (Prieto et al.) • Reading Guide "How to study Unit 1 and 2".	1,66	7
	2		Computer Lab Session: • Introduction to the Programming Software (IDE). "Hello World" program		X	NO	• Exercises about simple C programs • Download and use the corresponding IDE	1,66	

2	3		**<u>UNIT 3</u>. Basic elements of the C programming language (1/2).** • General structure of a program • Variables and constants • Types of operators: arithmetic, relational, logic, assignment operators. • Operators, expressions and instructions	X		NO	• Reading Guide "How to study Unit 1 and 2". • Exercises about simple C programs (Bibliography)	1,66	7
	4		**Computer Lab Session (Unit 3):** • Structure and main characteristics of a C program.		X	NO	• Understand and complete all the proposed practical exercises.	1,66	
3	5		**<u>UNIT 3</u>. Basic elements of the C programming language (2/2).** • Pointer type. • Input and output instructions.	X		NO	• Reading of the corresponding chapters. • Exercises about input and output instructions	1,66	7
	6		**Computer Lab Session (Unit 3):** • Programming Software (IDE): Input and output instructions.		X		• Understand and complete all the proposed practical exercises.	1,66	
4	7		**<u>UNIT 4</u>. Control structures (1/3).** • Selection structures: if-else, switch	X		NO	• Reading of the corresponding chapters. • Exercises about selection structures	1,66	7
	8		**Computer Lab Session (Unit 4):** • Exercises about selection structures.		X	NO	• Understand and complete all the proposed practical exercises.	1,66	
5	9		**<u>UNIT 4</u>. Control structures (2/3).** • Repetition structures (loops): for, while, do-while • Nested control structures	X		NO	• Reading of the corresponding chapters in the proposed literature. • Exercises about control structures	1,66	7
	10		**Computer Lab Session (Unit 4):** • Exercises about selection and repetition structures.		X	NO	• Understand and complete all the proposed practical exercises.	1,66	

6	11		**<u>UNIT 4</u>. Control structures (3/3).** • Exercises about repetition structures.	X		NO	• Exercises about control structures	1,66	7
	12		**Computer Lab Session (Unit 4):** • Exercises about repetition structures.		X	SI	• Understand and complete all the proposed practical exercises.	1,66	
7	13		**<u>UNIT 5</u>. Subprograms (1/2)** • Definition. • Modular programming. • Input / Output arguments.	X		NO	• Reading of the corresponding chapters in the proposed literature. • Exercises about arrays (Bibliography)	1,66	7
	14		**Computer Lab Session (Unit 5):** • Exercises about subprograms.		X	NO	• Understand and complete all the proposed practical exercises.	1,66	
8	15		**<u>UNIT 5</u>. Subprograms (2/2)** • Passing Arguments by Value or by Reference • Scope of Function Variables. Visibility • Arrays and structures as parameters • Library functions and standard C libraries	X		NO	• Reading of the corresponding chapters in the proposed literature. • Exercises about arrays (Bibliography)	1,66	7
	16		**Computer Lab Session (Unit 5):** • Exercises about subprograms.		X	NO	• Understand and complete all the proposed practical exercises.	1,66	
9	17		**<u>UNIT 6</u>. Structured data types (1/3)** • Structured vs simple data types • Definition and use of arrays • Pointers and arrays / Character strings	X		NO	• Reading of the corresponding chapters in the proposed literature. • Exercises about arrays (Bibliography)	1,66	7
	18		**Computer Lab Session (Unit 6):** • Exercises about subprograms and data types.		X	SI	• Understand and complete all the proposed practical exercises.	1,66	

10	17		**<u>UNIT 6</u>. Structured data types (2/3)** • User defined data structures: records • Arrays of records • Exercises about data types.	X		NO	• Reading of the corresponding chapters in the proposed literature. • Exercises about arrays (Bibliography)	1,66	7
	20		**Computer Lab Session (Unit 6):** • Exercises about subprograms.		X	NO	• Understand and complete all the proposed practical exercises.	1,66	
11	19		**<u>UNIT 6</u>. Structured data types (3/3)** • User defined data structures: records • Arrays of records • Exercises about data types.	X		NO	• Reading of the corresponding chapters in the proposed literature. • Exercises about arrays (Bibliography)	1,66	7
	22		**Computer Lab Session (Unit 6):** • Exercises about subprograms and final project.		X	NO	• Understand and complete all the proposed practical exercises.	1,66	
12	21		**<u>UNIT 7</u>. Search, sort and merge algorithms** • Search algorithms • Sort algorithms • Merge algorithms	X		NO	• Reading of the corresponding chapters in the proposed literature.	1,66	7
	24		**Computer Lab Session (Unit 7):** • Exercises about subprograms and merge algorithms.		X	SI	• Understand and complete all the proposed practical exercises.	1,66	
13	23		• **Exercises: exams of *previous years***	X		NO	• Reading of the corresponding chapters in the proposed literature. • Exercises about arrays (Bibliography)	1,66	7
	26		**Computer Lab Session (Unit 7):** • Exercises about subprograms and merge algorithms.		X	NO	• Understand and complete all the proposed practical exercises.	1,66	

14			**UNIT 8. Other topics in computer science and programming** • External data structures: files and databases • Dynamic memory allocation • Computer programs commonly used in engineering **Final Exercises:** • **Exams of *previous years*** **Computer Lab Session:** • Exercises: exams of *previous years*				• Understand and complete all the proposed practical exercises. • Exercises of previous years exams.	1,66 1,66	7
			Extra session – Continuous Evaluation Test		x	NO		1,5	
							Subtotal 1	47,98	96
							Horas presenciales y de trabajo del alumno en las semanas 1 -14	**143,48**	
			Recuperaciones, tutorías , entrega de Trabajos, etc…					1,66	7
			Preparación de evaluación y evaluación					4	15
								5,66	22
							Horas presenciales y de trabajo del alumno en las semanas 15 -18	**27,66**	
							TOTAL: Subtotal 1 + Subtotal 2. (Máximo 180 horas)	**171,14**	