



Universidade do Minho
Serviço de Gestão Académica

Carla Isabel Pereira Lavrador, Registrar of the University of Minho, hereby certifies, according to University records, that **Vitor Fernandes Alves**, born in the parish of Mosteiro, in the county of Vieira do Minho, in the district of Braga, son of Heitor Silva Alves and of Sandra Maria Cardoso Fernandes, obtained the following passing grades in the course units that constitute the *Licenciatura* in Engineering Physics:

Course Unit	Regime (1)	Type (2)	Academic Year	PT Mark (3)	ECTS Mark (4)	Credits (5)	Obs. (6)(7) (8)(9)
Calculus for Sciences	1	Ob	2022/2023	20	A	6.0	
Linear Algebra and Analytical Geometry for Sciences	1	Ob	2022/2023	17	B	6.0	
Introduction to Experimental Physics	1	Ob	2022/2023	19	A	6.0	
General Chemistry	1	Ob	2022/2023	16	B	6.0	
Introduction to Functional Programming	1	Ob	2022/2023	18	A	6.0	
Vectorial Calculus	2	Ob	2022/2023	20	A	6.0	
Newtonian Mechanics	2	Ob	2022/2023	18	A	6.0	
Complements of Calculus and Analytic Geometry	2	Ob	2022/2023	18	B	6.0	
Data and Computation	2	Ob	2022/2023	19	A	6.0	
Circuit Analysis	2	Ob	2022/2023	20	A	6.0	
Complex and Fourier Analysis	1	Ob	2023/2024	19	A	6.0	
Electromagnetism	1	Ob	2023/2024	18	B	6.0	
Analytic Mechanics and Waves	1	Ob	2023/2024	19	A	6.0	
Introduction to Electronics	1	Ob	2023/2024	18	A	6.0	
Newtonian Mechanics Laboratory	1	Ob	2023/2024	18	A	6.0	
Quantum Mechanics	2	Ob	2023/2024	18	B	5.0	
Statistical Physics	2	Ob	2023/2024	19	A	5.0	
Imperative Programming	2	Ob	2023/2024	18	A	5.0	
Computing Systems	2	Ob	2023/2024	18	A	5.0	
Complements of Electronics and Digital Systems	2	Ob	2023/2024	19	A	5.0	
Electromagnetism Laboratory	2	Ob	2023/2024	18	A	5.0	
Computational Physics for Engineers	1	Ob	2024/2025	18	A	5.0	
Complements of Quantum Mechanics	1	Ob	2024/2025	20	A	5.0	
Introduction to Microtechnologies in Silicon	1	Ob	2024/2025	14	C	5.0	
Continuous and Discrete Signal Processing	1	Ob	2024/2025	19	A	5.0	
Parallel Programming	1	Ob	2024/2025	17	A	5.0	
Option I - Algorithms and Complexity	1	Op	2024/2025	17	A	5.0	
Solid State Physics	2	Ob	2024/2025	20	A	5.0	
Introduction to Optics	2	Ob	2024/2025	19	A	5.0	
Integrated Sensors	2	Ob	2024/2025	19	A	5.0	
Instrumentation	2	Ob	2024/2025	18	A	5.0	
Option II - Quantum Information	2	Op	2024/2025	18	A	5.0	
Option UMinho - Topics in Astronomy and Cosmology	2	Op	2024/2025	20	A	5.0	

(1) - Regime: A - Annual 1 - 1st Semester 2 - 2nd Semester

(2) - Type: Ob - Compulsory Op - Optional

(3) - Grade: On a 0 to 20 grading scheme, a minimum grade of 10 in each course unit is necessary to pass, except in cases of credit transfer without an assigned grade.

(4) - ECTS Grading Scale

ECTS Grading Scale	% of approved students
A	10
B	25
C	30
D	25
E	10

In order to establish the course units grades for each group of the ECTS grading scale, the distribution of students with passes in the previous five academic years and/or in a total of at least thirty students is taken into consideration. When a cohort of this scale is impossible, the ECTS grading scale is replaced by the use of an institutional conversion table based on all course units grades of all University of Minho's Degree Courses from the previous five academic years. It is important to notice that not all groups of the ECTS grading scale might be represented.

(5) - ECTS Credits: 1 academic year= 60 1 semester = 30 1 term = 20

(6) - Training credit recognition

(7) - Extracurricular course units

(8) - Professional experience credit recognition

(9) - Training credit recognition due to changes in the study plan

She also certifies that he completed the above-mentioned Degree on the 27th of June, 2025, with the final grade of 18 (eighteen), classification A on the ECTS Scale, which confers a *licenciado* (bachelor) degree.

This same certificate carries the embossed seal of this University.

The Registry of the University of Minho, on the 11th of July, 2025.

The Registrar,

A handwritten signature in blue ink, appearing to be 'S. J.', followed by a period.