



Carla Isabel Pereira Lavrador, Registrar of the University of Minho, hereby certifies, according to University records, that **Gustavo João Gonçalves Caldas**, born in the parish of Segude, in the county of Monção, in the district of Viana do Castelo, son of João Carlos Marques Caldas and of Maria Celeste Rodrigues Gonçalves, obtained the following passing grades in the course units that constitute the *Licenciatura* in Engineering and Management of Information Systems:

Course Unit	Regime (1)	Type (2)	Academic Year	PT Mark (3)	ECTS Mark (4)	Credits (5)	Obs. (6)(7) (8)
Algorithms and Data Structures 1	1	Ob	2021/2022	15	C	10.0	(6)
Fundamentals of Information Systems	1	Ob	2021/2022	12	D	5.0	(6)
Fundamentals of Organization and Management	1	Ob	2021/2022	17	B	5.0	(6)
Calculus for Engineering	1	Ob	2021/2022	16	B	5.0	(6)
Linear Algebra and Analytical Geometry for Engineering	1	Ob	2021/2022	14	C	5.0	(6)
Algorithms and Data Structures 2	2	Ob	2021/2022	18	A	10.0	
Computing Systems	2	Ob	2021/2022	15	C	5.0	(6)
Principles of Economics	2	Ob	2021/2022	12	D	5.0	(6)
Topics on Discrete Mathematics	2	Ob	2021/2022	11	D	5.0	(6)
Fundamentals of Electromagnetism and Optics	2	Ob	2021/2022	13	D	5.0	(6)
Programming with Objects	1	Ob	2021/2022	16	B	10.0	(6)
Databases 1	1	Ob	2021/2022	14	C	5.0	(6)
Software Process and Methodologies	1	Ob	2021/2022	13	D	5.0	(6)
Operating Systems	1	Ob	2021/2022	11	D	5.0	(6)
Accounting	1	Ob	2021/2022	15	C	5.0	(6)
Development of Computer Applications	2	Ob	2021/2022	15	C	10.0	(6)
Databases 2	2	Ob	2021/2022	16	B	5.0	(6)
Introduction to Computer Networks	2	Ob	2021/2022	15	C	5.0	
Statistical Methods	2	Ob	2021/2022	15	C	5.0	(6)
Numerical Methods and Nonlinear Optimization	2	Ob	2021/2022	17	B	5.0	(6)
Data Engineering for Decision-Making Support	1	Ob	2021/2022	16	B	10.0	(6)
Implantation of Enterprise Informatic Applications	1	Ob	2021/2022	17	B	5.0	(6)
Fundamentals of Distributed Systems	1	Ob	2021/2022	12	D	5.0	(6)
Logistics and Production Management	1	Ob	2021/2022	14	C	5.0	(6)
Operational Research	1	Ob	2021/2022	15	C	5.0	(6)
Information Technology-Based Organizational Development	2	Ob	2021/2022	14	C	10.0	(6)
Artificial Intelligence Techniques	2	Ob	2021/2022	17	B	5.0	(6)
Web Programming	2	Ob	2021/2022	16	B	5.0	(6)
Financial Management	2	Ob	2021/2022	14	C	5.0	(6)
Option UMinho - Data Mining for Data Science	2	Op	2021/2022	18	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.

(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) - Course units subject to academic recognition

(7) - Extracurricular course units

(8) - Curricular units accredited by demonstration of professional competence and/or other training

She also certifies that he completed the above-mentioned Degree on the 4th of July, 2022, with the final grade of

15 (fifteen), classification B 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 6th of June, 2023.

The Registrar,

A handwritten signature in blue ink, consisting of a stylized 'R' followed by a horizontal line.