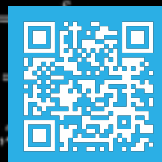**Bachelor • Porto**

COMPUTATION AND APPLIED MATHEMATICS

Direction

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Secretariat

Inês de Freitas Ramos
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Duration	Credits
3 Years	180 ects

Exams

Have one of the following sets:

- 04 Economia and 16 Matemática
- 07 Física e Química and 16 Matemática
- 16 Matemática and 18 Português
- 02 Biologia e Geologia and 16 Matemática
- 09 Geografia and 16 Matemática
- 13 Inglês and 16 Matemática

Presentation

1. With the exponential advance in the volume of ` big data¿ and its digital transformation over the last decade and a half, we have witnessed and continue to observe a phase of constant reinvention not only of the infrastructures and models of information systems, but also the reinvention of new profiles of professionals in the transformation of data into knowledge. 2. It can be seen that professionals trained in areas related to traditional ` Maths¿ have shown a very strong basis for facing this challenge. However, these professionals have made a great effort to adapt to IT infrastructures. 3. The aim is to maintain the analytical thinking of these professionals but also to develop skills in computer engineering.

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STUDY PLAN

1st Year / Common Core

1º Semestre	ects	2º Semestre	ects
Data Science Foundations	6	Exploratory Data Analysis	6
Discrete Mathematics	6	Introduction to Mathematical Probability	6
Mathematics I	6	Linear Algebra	6
Numerical Analysis	6	Mathematics II	6
Programming Fundamentals	6	Programming Languages	6

2nd Year / Common Core

1º Semestre	ects	2º Semestre	ects
Algorithms and Data Structures	6	Introduction to Stochastic Processes	6
Databases	6	Introduction to the Theory of Graphs and Networks	6
Fundaments of Data Engineering for Data Science	6	Machine Learning I	6
Introduction to Computer Science	6	Statistical Methods	6
Introduction to Ordinary Differencial Equations	6	Visualization for Data Science	6

3rd Year / Common Core

Anual	ects	1º Semestre	ects	2º Semestre	ects
Final Course Work	20	Machine Learning II	5	Cloud Information Systems	5
		Operational Research	5	Computer Networks	5
		Option I	5	Option III	5
		Option II	5	Option IV	5

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