

POSTGRADUATE PROGRAM

# HEALTH DATA SCIENCE AND ANALYTICS



The **Postgraduate Program in Health Data Science and Analytics** is specifically designed for healthcare professionals who aim to acquire advanced skills in managing, interpreting, and making strategic, data-driven decisions within the health sciences field.

The program develops essential **analytical skills for data analysis and management in health sciences**, addressing key questions in public health, biomedical sciences (biology, medicine, physiology, and pharmacology), and various decision-making levels within healthcare organizations.

**With a flexible and adaptable curriculum tailored to each student's personal and professional goals**, the program enables a customized learning path. Students can choose courses in high-demand areas, structured around three key pillars to promote:

- Proficiency in applying analytical methods in healthcare;
- The ability to manage and analyze large volumes of data, information, and knowledge within healthcare organizations;
- Understanding of technological innovation and the transformation of business models in the healthcare sector.

## Program Goals

By attending this postgraduate program, students will have the opportunity to:

- **Learn to manage, interpret, and transform data into strategic information**, with a direct impact on decision-making in healthcare organizations;
- **Explore technological trends and new business models** that are transforming the healthcare market;
- **Develop hands-on projects**, applying acquired knowledge to real-world scenarios with expert guidance and supervision;
- **Acquire practical skills in using innovative analytical tools** applied to real healthcare contexts;
- **Strengthen professional capabilities** by integrating analytical methods and data science into daily healthcare practice.

This practical approach, aligned with the current needs of the sector, ensures a robust education focused on highly valued market skills.

## Who is it for?

**This program is designed for professionals in the healthcare sector**, including Medicine, Pharmacy, Biomedical Sciences, Public Health, Nursing, and others working in health institutions, pharmaceutical companies, health insurance providers, technology companies (HealthTech), the medical devices and clinical diagnostics industry, laboratories and clinical research centers, specialized healthcare consulting firms, and public administration in the healthcare sector.

It is also intended for professionals from related fields such as Information Management, Statistics, Applied Mathematics, Economics, and Management, who wish to acquire advanced skills in data science and analytical methods applied to the healthcare sector.





## Study Plan

To complete the program, students must earn a minimum of **60 ECTS**, distributed across the main subject areas (**Data Science, Data Management, and Health Market**) and elective courses units.

Students must obtain at least **45 ECTS** in the main subject areas (**meeting the minimum requirements per area**) and may take up to **15 additional ECTS** in elective courses. These electives include course units not previously selected from the main areas, as well as others specifically offered as optional.

Students may enroll in a maximum of **75 ECTS**, although only **60 ECTS** are required for program completion.

Areas	Credits (ECTS)
Data Science	Successful completion of at least 22.5 ECTS
Data Management	Successful completion of at least 15 ECTS
Health Market	Successful completion of at least 7.5 ECTS
Optional Course Units	Up to 15 ECTS (required only if 60 ECTS are not reached in the main areas. Includes units not previously selected and other specifically offered optional units)
Total ECTS	≥ 60 ECTS

The following table presents the list of available courses units, along with their duration and ECTS credits.

Area	Curricular Unit	Duration Type	ECTS
<b>Data Science</b> Successful completion of at least 22.5 ECTS	AI and Machine Learning in Healthcare	Semester-based	7,5
	Biostatistics, Epidemiology and Public Health	Semester-based	7,5
	Data Analytics for Health	Semester-based	7,5
	Data Collection and Sampling for Health Data	Semester-based	7,5
	Data Visualization	Semester-based	7,5
	Regression Analysis	Semester-based	7,5
	Survival Analysis	Semester-based	7,5
<b>Data Management</b> Successful completion of at least 15 ECTS	Blockchain and Health Data Management	Semester-based	7,5
	Computational Statistics I	Semester-based	7,5
	Databases and Digital Health Systems	Semester-based	7,5
<b>Health Market</b> Successful completion of at least 7.5 ECTS	Clinical Trial Design	Quarter-based	4,0
	Innovation and Digital Transformation for Health	Semester-based	7,5
	New Healthcare Market	Semester-based	7,5
<b>Elective course units</b> Up to 15 ECTS (required only if 60 ECTS are not reached in the main areas. Includes units not previously selected and other specifically offered optional units)	Analysis of Discrete Data	Quarter-based	4,0
	Analysis of Variance	Quarter-based	4,0
	Forecasting Methods	Quarter-based	3,5
	Time Series Analysis	Quarter-based	4,0



# Postgraduate Program in Health Data Science and Analytics



## Program Coordination

- Professor Pedro Simões Coelho

## Academic Calendar and Schedule

The program has a duration of two academic semesters. Classes begin in September and end in June of the following year. The course follows an evening schedule, with classes held two to three times per week from 6:30 PM onwards.

## Admission Requirements

To enroll in this program, applicants must meet the following conditions:

- Hold a Bachelor's degree in a relevant field (completed by September);
- Be proficient in spoken and written English.

## Contact Information

For more information about this program, please contact the Admissions Office:

Email: [admissions@novaims.unl.pt](mailto:admissions@novaims.unl.pt)

Telephone: +351 213 828 610 (Call to the national fixed network)

## How to get to NOVA IMS

### Carris

701, 713, 716, 726, 742, 746, 756, 758, 770

### Subway (Metropolitano)

São Sebastião (Blue and Red Line)  
Praça de Espanha (Blue Line)

### GPS Coordinates

38.732462 | -9.159921

### Address

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NOVA IMS Accreditations and Certifications



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