EDHEC Business School launches Quantum Institute

The new institute, led by Professor Lionel Martellini, will prepare students and business leaders for a new era of science and technology in management

FOR IMMEDIATE RELEASE

Paris, 20 November 2025 – EDHEC Business School is proud to announce the creation of the EDHEC Quantum Institute (EQI), which will be led by Professor Lionel Martellini, PhD[1]. This new institute will help decision-makers understand—and shape—a future where quantum technologies play a central role. It will lead a range of research, education, innovation, and knowledge-sharing initiatives designed to connect quantum science with its real impact on businesses and society.

"EDHEC is pursuing its growth by widening the field of its research, following up on its successes in the financial, climate and legal fields. EDHEC has embarked on a new stage of its diversification strategy with this launch by opening up to science and technology, which are key to the future of the economy and business in general. True to its traditional useful research approach, EDHEC will use this new scientific field to create solutions for businesses as well as teaching and educational programmes," said Emmanuel Métais, Dean of EDHEC Business School.

Over the past century, quantum physics has fundamentally changed our perception of the world, leading to major technology discoveries such as lasers, transistors, MRIs and atomic clocks. The second quantum revolution is set to further transform our societies by harnessing the core principles of quantum mechanics—superposition, entanglement, and measurement—to unlock unprecedented computing, communication, and sensing capabilities. In doing so, it will accelerate the rise of artificial intelligence.

Today, global public and private investment in quantum technologies exceeds $ 40 billion. Finance, energy, cybersecurity, space, and biotechnology are at the forefront of this revolution and will be among the first to benefit from the breakthroughs ahead. This momentum is creating new demands for applied research and specialised education.

Exploring new scientific fields at the service of students, businesses and society

True to its strategy to explore new scientific fields useful to future generations, EDHEC is launching a new institute to help economic and political decision-makers, students, and the public better understand the changes the second quantum revolution will bring. Its goal is **to convert quantum innovation into solutions for businesses and society.**

Such radical innovation is integral to EDHEC's development strategy, which is founded on scientific research and academic excellence. The creation of the EDHEC Quantum Institute is possible in part thanks to a decision the school made in 2020 to join the Groupement d'Intérêt Economique (GIE) EURECOM. EURECOM is a world-renowned engineering school that collaborates with a select

[1] Lionel Martellini is a professor at EDHEC and formerly directed the EDHEC-Risk Institute. He holds doctorate degrees in finance and astrophysics and was part of the LIGO international collaborative team that led to the discovery of gravitational waves. His current research focuses on the fundamentals of quantum mechanics, with a special focus on the characterisation and modelling of temporal measurements in quantum systems, such as arrival or transition times.

group of academic and industry partners to advance information and communication technologies, including artificial intelligence and cybersecurity.

The EDHEC Quantum Institute will focus on four strategic areas:

- **Applied research** programmes designed to create value from the advantages of quantum science in key sectors such as finance, communication and security;
- **Education** programmes aimed at building quantum information science into management syllabuses to meet the increasing need for profiles that master quantum fundamentals, its use cases, and its strategic business implications;
- **Innovation** programmes to speed up industrial and entrepreneurial applications;
- **Influencing** programmes and knowledge-publication programmes to bolster the quantum culture in society.

"Quantum physics is all too often put forward as being incomprehensible, and even esoteric, based on mysterious notions such as superposition or entanglement. But quantum technology is neither magical nor mystical. It has its own logic, quantum logic, that nature uses to write the laws of the physical world at its most basic level. It is essential that our applied research programs run alongside awareness-raising initiatives and education covering quantum logic for economic and political decision-makers, the public at large, and students. 'From mystery to mastery': taking ownership of the quantum discourse, transforming fascination into understanding, are all essential in favouring the enlightened adoption of quantum technology as leverage for knowledge and innovation on behalf of society," said Lionel Martellini, Director of the EDHEC Quantum Institute.

Applied research: three flagship programmes

Research is the cornerstone of all EDHEC Quantum Institute activities. In its first phase, the institute will concentrate on three programmes spanning the fundamentals of quantum mechanics, quantum information and communications, and the applications of quantum technologies in finance and insurance.

Foundations of Quantum Mechanics

This programme complements the institute's more technical work by exploring the philosophical, conceptual, and interpretive dimensions of quantum mechanics—topics often overlooked in the dominant scientific discourse. Its first output will be a white paper designed to clarify foundational concepts such as superposition and entanglement, which will shape tomorrow's technological landscape.

Quantum Technologies for Information and Communications (with EURECOM)

EDHEC and EURECOM will create a Joint Lab focused on quantum information. Led by EURECOM Professor Arun Padakandla, researchers from EDHEC and EURECOM will focus on:

- **Information processing:** exploring quantum algorithms and computational methods to enhance data processing in complex systems;

- **Quantum cryptography:** developing secure communication protocols based on quantum key distribution;

- **Cybersecurity:** identifying cryptographic solutions capable of withstanding quantum attacks and ensuring long-term data security.

Quantum Technologies for Finance and Insurance

Anchored in EDHEC's longstanding excellence in financial research, this programme aims to identify the key risks and opportunities that quantum technologies present for the financial sector. Topics under consideration include the use of quantum information to value derivatives and optimise portfolios, as well as post-quantum cryptography to safeguard the future security of financial transactions and cryptocurrencies.

Beyond assessing the impact of quantum science on finance, the programme will also examine how finance can support the development of quantum technologies by analysing investment vehicles that provide effective exposure to this emerging industrial sector.

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About EDHEC Business School

EDHEC Business School, a leader in management education in Europe since 1906, has been ranked 7th Best Business School in Europe by the Financial Times for three straight years. EDHEC's 2024-2028 strategic plan – Generations 2050 – reflects the school's commitment to driving the world's most significant economic, social, and environmental transformations through impactful education and research. Our "raison d'être" is to make a positive impact on the world.

EDHEC profile

- 9400 undergraduate students, 175 professors and researchers, 14 centres of expertise, 130 nationalities
- A portfolio of transformative higher education programmes: Bachelor (BBA and BSc), Master in Management, Master of Science (MSc), MBAs (Full-time, Executive MBA and MBA Online), PhD in Finance, EDHEC Executive Education (for managers, executives, and entrepreneurs), EDHEC Online (created in 2018) for distance learning
- 3 French campuses that offer rich student experiences in Lille, Nice, and Paris, as well as 3 entrepreneurship campuses: the Jean Arnault Campus in Roubaix, EDHEC Entrepreneurs at Station F, the world's largest start-up campus in Paris, and Techforward in partnership with EURECOM and Institut les Mines-Telecom at Sophie Antipolis in Nice
- Triple-accredited for the highest quality in business education by AACSB, EQUIS, and AMBA

Learn more at: https://www.edhec.edu/en.