



GRADUATE PROGRAMS

PHD PROGRAMS

Applied Mathematics

Applied Mathematics is an interdisciplinary field that focuses on the creation and imaginative use of mathematical concepts to pose and solve problems over the entire gamut of the physical and biomedical sciences and engineering, and increasingly, the social sciences and humanities.

Projects current and past students have worked on include collaborations with mechanical engineers to uncover some of the fundamental properties of artificial muscle fibers for soft robotics and developing new ways to simulate tens of thousands of bubbles in foamy flows for industrial applications such as food and drug production.

Graduates of the program have gone on to a range of careers in industry in organizations like the Kingdom of Morocco, Meta, and Bloomberg. Others have secured faculty positions at Dartmouth, Imperial College in London, and UCLA.

Applied Physics

Applied Physics is located at the intersection of physics and engineering. Applied physicists are problem solvers by nature, spending their time exploring the phenomena that become the foundation of quantum and photonic devices and novel materials. Research in this area focuses on the fundamentals of complex systems (including living organisms), materials, photonics, quantum engineering, and soft matter.

Projects worked on by current and past students include developing millimeter-size flat lenses for virtual and augmented reality platforms, discovering materials for stable quantum computing, and building fundamental technologies for integrated photonics.

Graduates of the program have a range of careers in industry in companies like Apple, NTT Physics & Information Labs, and Intel. Others have secured faculty positions at University of Wisconsin, Stanford, and Columbia.

Bioengineering

Bioengineering interacts with many areas of the University and teaching hospitals. Bioengineers integrate fundamental engineering disciplines like thermodynamics and fluid mechanics with the physical and life sciences while drawing on mathematics and computational sciences.

Bioengineers at Harvard are making advances in bio-inspired robotics and computing, biometrics and motor control, cell and tissue engineering, biomaterials, and therapeutics. Examples of current and past projects are embedding stretchable nanoelectronics into brain organoids to study brain development and developing injectable clotting agents to reduce blood loss.

Graduates of the program have gone on to work in industry at companies like McKinsey & Company and Medtronic. Others have positions in academia at MIT, Vanderbilt, and Stanford.

Computer Science

Computer Science includes the fundamentals of computation and computation's interaction with the world. Research includes theoretical computer science, artificial intelligence and machine learning, economics and computer science, privacy and security, data-management systems, intelligent interfaces, operating systems, computer graphics, computational linguistics, robotics, networks, architectures, program languages, and visualization.

Examples of current and past projects include leveraging machine learning to solve real-world sequential decision-making problems and using artificial intelligence to help conservation and anti-poaching efforts around the world.

Graduates of the program have a range of careers in industry in companies like Riot Games as game director and Lead Scientist at Raytheon. Others have positions in academia at University of Pittsburgh, Columbia, and Stony Brook.

Electrical Engineering

Electrical Engineering studies systems that sense, analyze, and interact with the world. This practice is based on fundamental science and mathematics, creating opportunities for both theoretical and experimental research. Electrical engineers choose from a wide range of research areas such as circuits and VLSI, computer engineering and architecture, robotics and control, and signal processing.

Examples of projects current and past students have worked on include developing methods to trace methane emissions and improving models for hurricane predictions.

Graduates of the program have gone on to a range of careers in industry in companies like Tesla and Microsoft HoloLens and IBM. Others have positions in academia at University of Maryland, University of Michigan, and University of Colorado.

Environmental Science and Engineering

Environmental Science and Engineering is an interdisciplinary program with the common goal of understanding, predicting, and responding to human-induced environmental change. Research covers diverse set of scientific disciplines, including atmospheric physics and chemistry, oceanography, glaciology, hydrology, geophysics, ecology, and biogeochemistry.

Examples of current and past student projects include building bio-inspired robotics and developing personalized exosuits to assist in real-world walking.

Graduates of the program have a range of careers in organizations like the World Bank and the Earth System Research Laboratory at the National Oceanic and Atmospheric Administration (NOAA) and Tesla. Others have positions in academia at Georgia Tech, Oregon State University, and University of Rochester.

Materials Science & Mechanical Engineering

Materials Science and Mechanical Engineering ranges from fundamental work in solid and fluid mechanics to diverse studies in materials, mechanical systems, and biomechanics. Research covers dynamics, fluids, materials, solids, and thermodynamics.

Students have worked on projects like seeking to create a revolutionary implantable brain-machine interface that can improve the treatment of neurological disorders and engineering the next generation of pop-up and inflatable buildings.

Graduates of the program have gone on to found startups in healthcare and robotics and have begun a range of careers in law, industry, and government. Others have positions in academia at the University of Toronto, University of Rochester, and Harvard.

SEAS does not accept General GRE scores nor Subject Test GRE scores for applicants to our Ph.D. programs or masters degree programs in Data Science and Computational Science & Engineering.

Questions?

Email: admissions@seas.harvard.edu



Prospective Student Info



Academics

Application Deadline

Ph.D. Programs
December 15

MASTERS PROGRAMS

Data Science & Computational Science and Engineering

Applied Computation uses computational data science principles to solve challenges at the frontiers of natural and social science and all engineering fields. Students in the Data Science program (in partnership with the Statistics Department in the Faculty of Arts and Sciences) and the Computational Science and Engineering program are trained to solve real-world problems and conduct innovative research by using mathematical models, algorithms, systems innovations and statistical tools.

Application deadline: December 1, 2023

Master in Design Engineering

The Master in Design Engineering (MDE) program is a collaborative degree program between the Harvard Graduate School of Design and the Harvard School of Engineering that leverages the combined power of design and engineering to address the world's toughest challenges and develop solutions that improve society.

The world faces increasingly complex dilemmas of consequence to human lives and living environments. These problems demand a deep and systems-level understanding of the underlying problem architecture, which in turn enables innovative, multi-faceted solutions that transcend disciplines and scales.

Application deadline: January 12, 2024

MS/MBA: Engineering Sciences

The MS/MBA: Engineering Sciences program is a joint degree program between Harvard Business School and the Harvard School of Engineering through the Griffin Graduate School of Arts and Sciences. The curriculum helps students build the technology, design, and business know-how needed to lead new ventures.

The program prepares future tech innovators and entrepreneurs with an advanced blend of engineering proficiency, design vision and managerial leadership that typically takes many years to develop on the job.

Application deadlines: September 7, 2023 (Round 1); and January 4, 2024 (Round 2)

CERTIFICATE PROGRAMS

Business Analytics Certificate

This online business analytics program helps experienced professionals explore new ways to analyze, interpret, and utilize data to inspire competitive business advantages. The program is a collaboration between Harvard Business School, the School of Engineering, and the Faculty of Arts and Sciences. The rigorous curriculum consists of Harvard faculty-designed courses that build technical, analytical, and operational capabilities.

Leading in AI: Exploring Technology & Policy

The use of Artificial Intelligence (AI) and Machine Learning (ML) is expanding into nearly every sector of society—from healthcare and finance to transportation and government services. Yet, most decision makers do not fully understand how these technologies work, nor fully grasp the potential unintended consequences of their application. Created jointly by the Harvard School of Engineering and Harvard Kennedy School, this program provides leaders with the tools and resources to better navigate this uncharted territory. This new executive program will strengthen participants' capacity to lead in AI, including how to mitigate risk without inhibiting innovation.

Professional
& Lifelong
Learning
Information



FUNDING & SCHOLARSHIP

Financial support for Ph.D. students

All students admitted into our Ph.D. program receive full financial support independent of need, provided a student remains in good academic standing and is making satisfactory progress towards their Ph.D. degree. Financial support takes several forms: fellowships, teaching fellowships, and research assistantships.

Applicants and current students are encouraged and expected to apply for all non-Harvard scholarships for which they are eligible, especially those offered by the National Science Foundation (NSF) Graduate Research Fellowship Program and National Defense Science and Engineering Graduate Fellowship (NDSEG).

Financial support for masters students (M.E. & S.M.)

While financial aid is not available for students in the Applied Computation masters programs, prospective students are encouraged to apply for independent grants and fellowships to fund their studies, such as the Amazon Robotics Day One Fellowship for underrepresented students. Applied Computation masters students should contact the Griffin Graduate School of Arts and Sciences (GSAS) Financial Aid Office to learn more. Applicants to the MS/MBA and MDE programs should contact Harvard Business School and the Harvard Graduate School of Design, respectively.

Program application fee:

The Griffin GSAS non-refundable application fee is \$105, payable by credit card only. For those prospective applicants for whom the application fee would be a financial hardship, need-based fee waivers are available. Applicants can determine eligibility for a fee waiver by completing a series of questions in the Application Fee section of the application. Once these questions have been answered, the application system will provide an immediate response regarding fee waiver eligibility. More about the fee waiver process can be found on the Griffin GSAS website.

For more information:

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CENTERS & INITIATIVES

Berkman Klein Center for Internet and Society
Broad Institute
Center for Brain Science (CBS)
Center for Integrated Quantum Materials (CIQM)
Center for Nanoscale Systems (CNS)
Center for Research on Computation and Society (CRCS)
Edmond Safra Center for Ethics
Embedded EthiCS @ Harvard
Harvard Catalyst
Harvard Center for Risk Analysis (HCRA)
Harvard-China Project on Energy, Economy, and Environment (China Project)
Harvard Data Science Initiative (HDSI)
Harvard Grid
Harvard Move Lab
Harvard Quantitative Biology (QBio)
Harvard Quantum Initiative (HQI)
Harvard University Center for the Environment (HUCE)
Harvard University Privacy Tools Project
Institute for Applied Computational Science (IACS)
Integrated Mesoscale Architectures for Sustainable Catalysis (IMASC)
The Learning Incubator (Linc)
Laboratory for Design Technologies (LDT)
Materials Research Science and Engineering Center (MRSEC)
Max Planck-Harvard Research Center for Quantum Optics (MPHQ)
Microbial Sciences Initiative (MSI)
Mind Brain Behavior Initiative (MBB)
Robotics at Harvard
Wyss Institute for Biologically Inspired Engineering at Harvard University

CLUBS & ORGANIZATIONS

SEAS Graduate Council
Harvard SEAS Society of Women Engineers (SWE)
Harvard GSAS Business Club
Harvard Graduate Women in Science and Engineering at GSAS (HGWISE)
Harvard Society for Black Scientists and Engineers (NSBE Chapter)
Harvard SEAS Society of Hispanic Professional Engineers (SHPE)
GSAS Harvard Big Data Club (HBDC)
GSAS Society of Underrepresented Students in STEM (GSUSS)
GSAS Harvard Biotechnology Club
Engineers without Borders (EWB)
Photonics Club

MORE INFORMATION

Centers & Initiatives



Clubs & Organizations



Funding & Scholarship

