ADMISSION REQUIREMENTS

A BACHELOR'S DEGREE from a recognized accredited institution, with a strong background in Mathematics, Computer Science, Natural Science or Engineering.

PROOF OF ENGLISH LANGUAGE PROFICIENCY

Check our website for requirements and waiver conditions.

SCHOLARSHIPS & FINANCIAL AID

- Merit-based Scholarships
- Research Assistantships
- Work-study

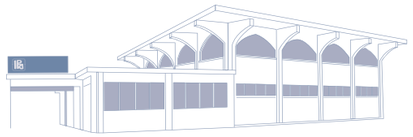
Refer to our website for details.

APPLICATION DEADLINE

Check our website for application deadlines.

CONTACT

Office of Graduate Studies
The Cyprus Institute
20 Konstantinou Kavafi Street
2121, Aglantzia | Nicosia, Cyprus
Tel. +357 22208614 | Website: www.cyi.ac.cy
Email: office.school@cyi.ac.cy



The Cyprus Institute Graduate School reserves the right to make any changes to the program.

Program Team

PROGRAM COORDINATOR
Prof Constantia Alexandrou

INSTRUCTORS
Prof Costas Papanicolas
Prof George Christophides
Asst Prof Theodoros Christoudias
Asst Prof Giannis Koutsou
Asst Prof Yury Suleymanov
Asst Prof Mihalis Nicolaou

ASSISTANT INSTRUCTORS
Dr Charalambos Chrysostomou
Dr Kyriakos Hadjiyiannakou
Dr Jacob Finkenrath

Why study at the Cyprus Institute Graduate School?

EXCEPTIONAL FACULTY

Students have the opportunity to work alongside exceptional faculty and world leading research teams that are attracted to The Cyprus Institute due to its intensive research focus and Cyprus's unique geographical position that give access to an area abundant with research challenges and opportunities.

STATE-OF-THE-ART FACILITIES

The Cyprus Institute has attracted an impressive number of European projects and other competitive grants which have co-funded a number of state-of-the-art facilities, many of which are unique on a national and regional level. Our students have access to these facilities throughout the duration of their graduate research.

LOW STUDENT-FACULTY RATIO

The Graduate School maintains a small number of hand-picked students, which results in a low student-faculty ratio. This allows for a high degree of individual focus in research, personal guidance, mentoring and career coaching resulting in successful placements.

MULTICULTURAL ENVIRONMENT

The School values the strengths that a multicultural environment provides so it has made it a priority to promote diversity, hence: 48% of our students and 70% of our faculty are international. English is the medium of instruction and communication.

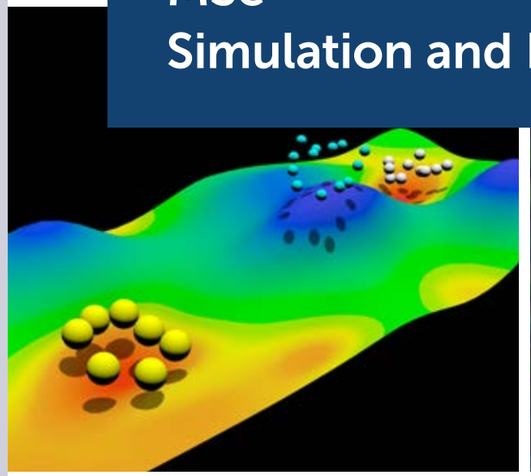
RESEARCH ASSISTANTSHIPS

The Cyprus Institute is a champion in competitive research, attracting an impressive number of European projects and other competitive grants; in the first three years of Horizon 2020, The Cyprus Institute attracted eight times more funding than the European average (per researcher). As a result, many of our students have research assistantships, immersing them in research teams which provides them research project experience alongside their theoretical education.

Collaborations with: JÜLICH, NCSA, PRACE, IBM, SESAME

THE CYPRUS INSTITUTE GRADUATE SCHOOL

MSc
Simulation and Data Science



The Cyprus Institute

RESEARCH • TECHNOLOGY • INNOVATION

Accredited by

ΔΙΠΑΕ CYQAA THE CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

Why Simulation and Data Science?

This is a unique degree program in Cyprus which combines simulation with the new field of data science.

The program provides training that combines Simulation with the emerging field of Data Science. Simulation has become an indispensable part of research and development in numerous diverse areas based on the rapid evolvement of computer technologies. Advanced computing is also becoming essential in order to analyse the huge amount of data collected in almost all disciplines, either from simulations or from observations and instruments. Environmental, biological and physical sciences, financial economics, and the humanities are producing an unprecedented amount of data that needs to be analysed and visualized. Through modeling and simulation, machine and deep learning approaches, students will learn to use modern computers to gain new insights in a diverse area of applications.

Students enrolled in the Master's program will carry out their research primarily at the Computation-based Science and Technology Research Center (CaSToRC) of the institute.

Career Prospects for Program Graduates

Program graduates can pursue a career as computational and data scientists in physical sciences, life sciences, environmental sciences, health, medicine, digital humanities and market modeling.

Students can also continue their studies at the PhD level either in Cyprus or abroad. In particular, graduates of the program can apply to the PhD in Computational Sciences of The Cyprus Institute, which offers generous financial aid opportunities.

Research Infrastructure

SUPERCOMPUTER, HPCF

The main production machine is a multi-teraflop/s High Performance Computing Facility, which consists of the hybrid CPU and GPU machine and associated storage.

PROTOTYPES FOR EVALUATING NEW TECHNOLOGIES

CYI maintains prototype systems for evaluating new computer technologies, including a system of Intel Xeon Phis and NVIDIA PASCAL GPUs.

EDUCATIONAL SYSTEMS

CYI maintains small clusters equipped with GPU accelerators for education and training purposes.

ACCESS TO MULTI-PETAFLOP SYSTEMS

Systems especially designed for compute intensive, highly scalable applications are accessible to CYI researchers via large scale allocations, for example via PRACE. Systems include supercomputers at the Jülich and Leibniz Supercomputing Centers in Germany, the Swiss National Supercomputing Centre, and at the Oakridge National Lab in the US.

VISUALIZATION UNIT ESTABLISHED IN PARTNERSHIP WITH JVC US RESEARCH LAB, G. OURISSON

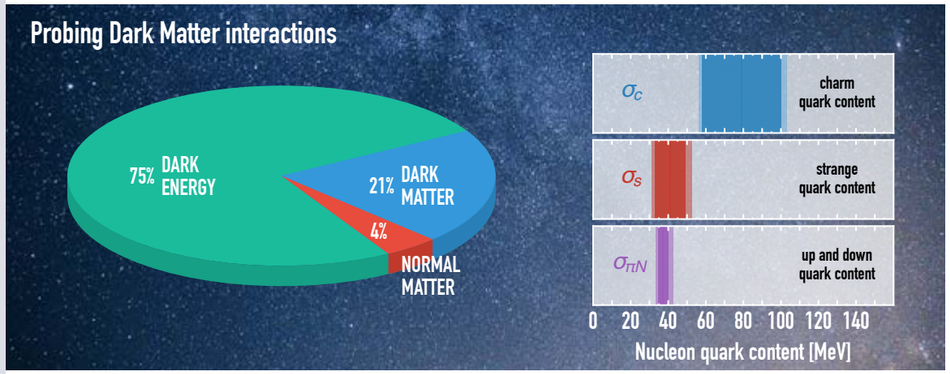
Visualization Laboratory (VisLab) allows researchers from all centers of CyI to better understand complex phenomena and visualize their data as images on large-scale and high-resolution visualization walls or other display devices.

VISUALIZATION IMMERSIVE ENVIRONMENT

It features state-of-the-art equipment, such as 3D stereoscopic projectors, Oculus Rift stereoscopic goggles, and a Vitruix Omni treadmill.

PRIVATE CLOUD, HPCF

A private cloud based on OpenStack is hosted by the HPCF. The private cloud consists of 15 compute nodes providing 100 physical cores, 1 TB of RAM and 100 TB of storage.



Large-scale simulation for the direct evaluation of the quark content of the nucleon from lattice QCD by researchers of CaSToRC of The Cyprus Institute in collaboration with the University of Cyprus and DESY-Zeuthen

PROGRAM STRUCTURE

The full name of the degree offered is Master of Science in Simulation and Data Science. This is a 90 ECTS credit, one year program.

Students take courses during the first two terms (30 ECTS credits during each term). Students are also required to complete a research project which is submitted in the form of a thesis project and must be defended at the end of the program.

Students in the program will acquire the following skills:

- Predictive analytics, machine learning including deep learning algorithms
- Computing environments and workflows
- Data management and visualization of large and diverse data sets
- Statistical techniques and methods to interpret data
- Numerical methods and scalable algorithms for current computer architectures such as graphic cards
- Mathematical modeling of processes covering applications from a range of fields such as physics, earth system science, chemistry, biology, digital humanities, medical imaging
- Solution of real-world problems at the core of data science that use and exploit big data

COURSES

Mandatory Courses		ECTS
SDS 401	Mathematical Modeling and Algorithms	10
SDS 402	Introduction to High Performance Computing	10
SDS 403	Fundamentals of Data Science and Statistics	10
SDS 404	Machine Learning and its Applications	10
Elective Courses		
SDS 416	Visualization and Advanced Data Structures	10
SDS 417	Advanced Computer Architectures	10
SDS 418	Deep Learning Approaches	10
SDS 419	Modeling and Simulation for Scientific Applications	10

The language of instruction and communication of The Cyprus Institute (CyI) is English.

Students who continue on to PhD studies at CyI may have certain courses and research requirements waived.