



College of Health and Life Sciences

Prospectus 2023/2024

كلية العلوم الصحية والحيوية
College of Health & Life Sciences

جامعة حمد بن خليفة
HAMAD BIN KHALIFA UNIVERSITY

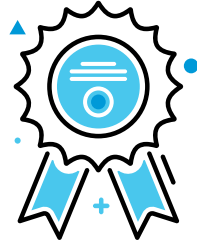


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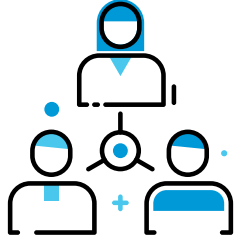
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About HBKU



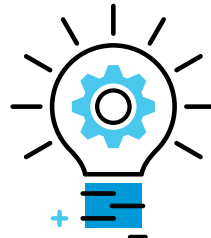
Excellence

Recognition of Quality
through Excellence



People

Shaping Society



Innovation

Leading Transformation



Partners

Success through Synergy

About HBKU

Innovating Today, Shaping Tomorrow

Hamad Bin Khalifa University (HBKU), a member of Qatar Foundation for Education, Science, and Community Development (QF), was founded in 2010 to continue fulfilling QF's vision of unlocking human potential.

HBKU is a homegrown research and graduate studies university that acts as a catalyst for positive transformation in Qatar and the region while having a global impact.

Located within Education City, HBKU seeks to provide unparalleled opportunities where inquiry and discovery are integral to teaching and learning at all levels, utilizing a multidisciplinary approach across its focus areas.

The university provides an array of graduate programs through its College of Islamic Studies, College of Humanities and Social Sciences, College of Science and Engineering, College of Law, College of Health and Life Sciences, and College of Public Policy.

HBKU is also home to three research institutes – Qatar Biomedical Research Institute (QBRI), Qatar Computing Research Institute (QCRI), and Qatar Environment and Energy Research Institute (QEERI) – which together with the colleges are at the forefront of efforts to seek novel solutions to grand challenges facing Qatar and the region.

Additionally, HBKU's Executive Education Center delivers customized programs for the business community of Qatar and the region.



Why Study at HBKU?

“As a student at HBKU, you have the opportunity to play a key role at an institution which, at its heart, is committed to innovating today and shaping tomorrow.”

At Hamad Bin Khalifa University, our people are our greatest strength, and when students enroll in one of our academic programs, they become part of a thriving community that is committed to the pursuit of excellence and innovation. HBKU has a mandate to build and cultivate human capacity by offering students an enriching academic experience that extends beyond the classroom. By utilizing unique collaborations with local and international partners, we aim to tackle the challenges of the region and the world through interdisciplinary education and innovative research.

HBKU is proud to offer students the opportunity to learn from world-renowned faculty and industry leaders through our colleges and our three national research institutes, providing the knowledge, skills and experience necessary to become experts in

their chosen fields, and take their careers to the next level. HBKU is situated in a regional economic and cultural hub, and our students benefit greatly from exposure to diverse perspectives as they determine how to use their degrees to positively contribute to their own development and that of their communities, whether in Qatar or across the world.

Additionally, HBKU benefits from an exceptional student-to-faculty ratio and from being based in Education City – a unique hub of learning that offers students a wealth of opportunities to play an active role in a vibrant multicultural environment.

As a student at HBKU, you have the opportunity to play a key role at an institution that, at its heart, is committed to innovating today and shaping tomorrow.

Research

Research is the cornerstone of Hamad Bin Khalifa University's commitment to building human capacity through interdisciplinary education and innovation that supports Qatar's journey towards sustainable growth. HBKU's interdisciplinary research and education environment is distinguished by a unique synergy among the colleges and research institutes.

The university's students, faculty, and researchers work within an ecosystem that addresses challenges of national priority and contributes to outcomes with a tangible impact on society. Collectively, they are achieving breakthroughs in the fields of biomedicine, genomics and precision medicine, information and communications technology and sustainability, while advancing knowledge across the humanities, Islamic studies, law, and public policy.

At each of the six colleges, students work under the guidance of faculty to conduct research that results in tangible solutions and innovative outcomes.



About College of Health and Life Sciences



College Overview

The College of Health and Life Sciences (CHLS) provides essential educational and research training to future leaders in the fields of biomedical sciences, genomics, precision medicine, and exercise science.

The College embodies a multidisciplinary learning approach to research and discovery and aims to become a dedicated hub of knowledge sharing in the area of health and life sciences. Its programs integrate scientific expertise by combining a seasoned collective of research partners within the university with esteemed external clinical and health science partners.



Students and Alumni

CHLS graduates leave HBKU enriched in knowledge of, and experience in, state-of-the-art basic, clinical, and translational research approaches, which are foundational to advances in biomedical and health sciences. Our alumni are equipped to address the pressing needs of the healthcare sector and contribute to fulfilling the Qatar National Vision 2030.

CHLS attracts and trains outstanding students from Qatar and many other countries, all of whom possess the intellect and motivation to pursue scientific discovery within the research laboratories of the college or its research partners.

Graduates typically choose to pursue careers in the following areas:

- ▶ Academia and education
- ▶ Biomedical research
- ▶ Healthcare
- ▶ Pharmaceutical and biomedical companies
- ▶ Ministries and governmental agencies
- ▶ Exercise physiology targeting precision fitness training

Faculty and Research Areas

CHLS comprises internationally recognized faculty pursuing high-impact research in important, health-related fields.

Research programs often include disease models, with an emphasis on the translation of research outcomes to address clinical challenges. The creation of multidisciplinary teams is a major focus, allowing the college to attract the necessary resources to maintain and build the technologies required to support its research goals.

Transdisciplinary collaborations drive innovation and spur achievement of successful outcomes, aligning the expertise of the wider community of HBKU colleges and partner institutions.

Faculty are involved in the following areas of research:

- ▶ Neuroscience
- ▶ Cardiovascular
- ▶ Rare diseases
- ▶ Cancer biology
- ▶ Omics (genomics, metabolomics, proteomics)
- ▶ Bioinformatics
- ▶ Molecular and cellular biology
- ▶ Mechanobiology
- ▶ Exercise physiology
- ▶ Epidemiology
- ▶ Biomechanics
- ▶ Drug discovery
- ▶ Biopsychology



Research Collaborations

Research is enhanced within HBKU by a highly collaborative environment both at CHLS and with HBKU research institutes, partner universities

within Qatar Foundation (Weill Cornell Medicine-Qatar and Carnegie Mellon University in Qatar), and Sidra Medicine.



Our Research Partners

كلية العلوم والهندسة
College of Science & Engineering
جامعة حمد بن خليفة
HAMAD BIN KHALIFA UNIVERSITY



كلية الدراسات الإسلامية
College of Islamic Studies
جامعة حمد بن خليفة
HAMAD BIN KHALIFA UNIVERSITY



QBRI
معهد قطر لبحوث الطب الجزيئي
Qatar Biomedical Research Institute
جامعة حمد بن خليفة
HAMAD BIN KHALIFA UNIVERSITY



مختبر مكافحة المنشطات قطر
Anti Doping Lab Qatar



المركز الطبي البيطري للخيل
Equine Veterinary Medical Center
عضو في مؤسسة قطر
Member of Qatar Foundation



قطر بيوبانك
qatarbiobank
for medical research
عضو في مؤسسة قطر
Member of Qatar Foundation



جامعة قطر
QATAR UNIVERSITY



أسبيتار
ASPETAR



ExxonMobil



قطر جينوم
QATAR GENOME
عضو في مؤسسة قطر
Member of Qatar Foundation



سدرة للطب
Sidra Medicine



مؤسسة حمد الطبية
Hamad Medical Corporation
HEALTH • EDUCATION • RESEARCH • بحوث • تعليم • صحة



Weill Cornell Medicine-Qatar

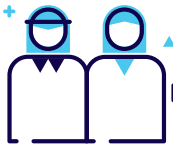


At a Glance



6 Programs

- PhD in Biological and Biomedical Sciences
- PhD in Biopsychology and Neuroscience
- PhD in Genomics and Precision Medicine
- Master of Science in Biological and Biomedical Sciences
- Master of Science in Exercise Science
- Master of Science in Genomics and Precision Medicine



130 Students

Qatari Students (16%)



70 Nationalities

across HBKU



109 Alumni



Programs



Programs

CHLS delivers innovative MS and PhD programs in Biological and Biomedical Sciences, Biopsychology and Neuroscience and in Genomics and Precision Medicine, along with an MS in Exercise Science program.

Genomics focuses on personalized medical treatment, while biological and biomedical sciences are foundational to establishing a mechanistic understanding of disease to promote good health. The programs equip students with the knowledge to lead scientific discovery and to advance personalized healthcare, shaping future leaders who are able to address modern health threats and identify potential future challenges. The faculty are energetic and innovative, collaboratively crossing disciplines to provide novel insights on the needs of the health care sector. A vibrant and interactive collection of joint and adjunct faculty enriches the training platform.

Exercise science aims to develop knowledge on the relationships between participating in exercise and physical activity and human health, to achieve health benefits that enable individuals to sustain physical and mental health.

The program also trains future leaders in neuroscience to enhance research and mental healthcare in Qatar. Students gain advanced knowledge of the neural mechanisms behind behavior, aging, and brain disorders.

The objective of the colleges' training programs is to attract outstanding students from Qatar, the region, and around the world.

Students have the unique opportunity to pursue an extensive array of research-intensive MS and PhD programs:

- ▶ PhD and MS in Genomics and Precision Medicine
- ▶ PhD and MS in Biological and Biomedical Sciences
- ▶ MS in Exercise Science (joint degree with the University of South Carolina)
- ▶ PhD in Biopsychology and Neuroscience

CHLS is well-positioned to undergo substantial growth, and the university and the college offer unprecedented opportunities for professional enrichment and personal fulfillment.

Master of Science in Exercise Science



The Master of Science (MS) in Exercise Science is as a joint degree with the top ranked graduate exercise science program in the United States, the Arnold School of Public Health at the University of South Carolina (UofSC).

Capitalizing on the recognized strengths of the UofSC program, the MS in Exercise Science will establish within Qatar and the MENA region a top-ranked educational and research degree program in exercise science. The program aligns

with the objectives of the Qatar National Vision 2030 and the National Health Strategy 2018–2022, aiming to promote healthy lifestyles and enhance the health and welfare of the people of Qatar.

The MS in Exercise Science program is the only graduate program in exercise science in Qatar and prepares students for a spectrum of health-related specialties and professions within the field of Exercise Science.

Program Focus

The MS in Exercise Science program addresses the complex relationships between exercise participation, physical activity, and human health. The program is designed to cultivate capacity in exercise science through innovative educational and research training and opportunities. Students within the program will receive knowledge and thesis research opportunities in:

- ▶ Applied Physiology
- ▶ Rehabilitation Sciences
- ▶ Health Aspects of Physical Activity

Curriculum

A 33-credit program, taught in English, over two years including:

- ▶ Five foundational core courses
- ▶ A minimum of four electives
- ▶ Thesis research

Courses include:

- ▶ Introduction to Public Health
- ▶ Applied Biostatistics
- ▶ Research Methods in Exercise Science
- ▶ Physiology of Exercise
- ▶ Cardiopulmonary Exercise Testing
- ▶ Epidemiology of Physical Activity and Health
- ▶ Exercise Endocrinology
- ▶ Mechanisms of Motor Skill Performance
- ▶ Applied Biomechanics
- ▶ Behavioral Aspects of Physical Activity

Master of Science and PhD Programs in Biological and Biomedical Sciences

The Master of Science and PhD programs in Biological and Biomedical Sciences (BBS) are multidisciplinary graduate programs that aim to train the next generation of leaders in biomedical sciences. The Master's and PhD degree paths offer students an education that provides them with an advanced level of knowledge – particularly in applied areas of biological and biomedical sciences – and helps them develop critical and independent reasoning skills.

Program Focus

- ▶ The exploration of a rigorous curriculum designed to provide a strong foundation, as well as cutting-edge knowledge in both the theoretical and applied aspects of biomedically relevant areas of biology.
- ▶ The development of vital professional skills, such as clear verbal and written communication and critical evaluation of others' work.
- ▶ Students will be exposed to state-of-the-art basic, clinical, computational, and translational life sciences research.

Curriculum

Master of Science in Biological and Biomedical Sciences:

A 33-credit program taught in English over two years that includes:

- ▶ Five mandatory foundation courses
- ▶ A minimum of three elective courses
- ▶ Attendance at departmental seminars
- ▶ Thesis work and laboratory training

PhD in Biological and Biomedical Sciences:

A program with a minimum of 54 credits taught in English, typically over four years, which includes:

- ▶ One mandatory foundation course
- ▶ A minimum of five elective courses
- ▶ Participation in departmental seminars
- ▶ Participation in the BBS journal club
- ▶ Dissertation research and laboratory training (minimum of six semesters)

PhD students are required to pass a qualifying examination after their second semester, and a candidacy examination after their fourth semester.

Master of Science and PhD Programs in Genomics and Precision Medicine

HBKU's Genomics and Precision Medicine (GPM) programs are multidisciplinary graduate courses that have been designed to prepare the next generation of professionals and leaders, who will help implement the use of precision and personalized medicine in the healthcare system.

The Master of Science and PhD degree paths in GPM offer students advanced knowledge and training in state-of-the-art information gathering and analysis technologies in order to integrate “omics” – the branch of biology that deals with data on global changes at the molecular level in patients – with clinical data.

Program Focus

- ▶ The exploration of a rigorous curriculum and practical training designed to provide a strong foundation, as well as cutting-edge knowledge, in both theoretical and applied aspects of genomics and precision medicine.
- ▶ Students will be exposed to the latest advancements in the field of genomics and precision medicine and will explore state-of-the-art basic, clinical, technological, computational, and legal and ethical aspects of a fascinating, fast-expanding sector of the life sciences.
- ▶ Throughout their studies, students will examine aspects of the four main pillars of genomics and precision medicine: clinical aspects, technology, omics, and bioethics.

Curriculum

Master of Science in Genomics and Precision Medicine:

A 33-credits program, taught in English over two years, that includes:

- ▶ Five mandatory foundation courses
- ▶ A minimum of three elective courses
- ▶ Attendance at departmental seminars
- ▶ Thesis work and laboratory training

PhD in Genomics and Precision Medicine:

A program with a minimum of 54 credits, taught in English, typically over four years, which includes:

- ▶ One mandatory foundation course
- ▶ A minimum of five elective courses
- ▶ Participation in departmental seminars
- ▶ Participation in the GPM journal club
- ▶ Dissertation research and laboratory training (minimum of six semesters)

PhD students are required to pass a qualifying examination after their second semester, and a candidacy examination after their fourth semester.

PhD in Biopsychology and Neuroscience

The PhD program in Biopsychology and Neuroscience (BNS) is a multidisciplinary graduate program that aims at training the next generation of leaders in Neuroscience. The BNS program is designed to enhance the research capacity and mental health care in Qatar, by providing students with the necessary skills and knowledge to tackle complex problems related to mental health and behavior.

Through the BNS PhD degree path, students will gain an advanced education that enables them to grasp the biological foundations of cognition, behavior, and aging of the nervous system. This training will equip them with a deep understanding of the neural mechanisms underlying cognition, behavior, and aging, as well as of brain disorders.

Program Focus

The Biopsychology and Neuroscience PhD program has a strong focus on the application of innovative technologies and artificial intelligence to tackle brain development, function, and aging in both physiological and pathological conditions.

- ▶ The field of neuroscience is defined by the pursuit of understanding the function and dysfunction of the nervous system. BNS program aims to equip neuroscience practitioners with the ability to synthesize, use, and advance knowledge in molecular and cellular biology, biochemistry, genetics, biophysics, and artificial intelligence applied to nerve cells.
- ▶ Graduates of our program will receive rigorous training in critical thinking, experimental design, and statistical analysis. They will become fluent in these areas and be well-prepared to study brain disorders and behavior. BNS' goal is to produce highly skilled professionals who are well-equipped to tackle the challenges of understanding the brain and its relationship to behavior and mental health.

Curriculum

PhD Biopsychology and Neuroscience:

A program with a minimum of 60 credits, taught in English, typically over four years, which includes:

- ▶ Two mandatory foundation course
- ▶ A minimum of four elective courses
- ▶ Participation in departmental seminars
- ▶ Participation in the Journal Club
- ▶ Dissertation research and laboratory training (minimum of six semesters)

PhD students are required to pass a qualifying examination after their second semester, and a candidacy examination after their fourth semester. The program will bring together developmental neurobiology, systems neuroscience, biology of aging, biology of behavior and psychology, and artificial intelligence to stimulate creativity and innovation.

Program Requirements:

60 Credits distributed as follows:

- ▶ 2 core courses + 4 electives course (18 credits)
- ▶ Thesis Research Hours (42 credits)
- ▶ Minimum two semesters of seminars (0 Credits)

Courses include:

- ▶ Advanced Neurosciences
- ▶ Development and Diseases of the Nervous System
- ▶ Molecular and Cellular Biology of Neurodegenerative Diseases
- ▶ Functional Human Neuroanatomy
- ▶ Artificial Intelligence (Joint course offered by CSE)
- ▶ Research Methods and Ethics in Biopsychology and Neuroscience
- ▶ Applied Behavioral Statistics (Joint course offered by CHLS)
- ▶ Advanced Molecular Biology
- ▶ Stem Cell Biology
- ▶ Scientific Communication and Professional Development
- ▶ Advanced Genetics
- ▶ Bioinformatics
- ▶ Epigenetics
- ▶ Pharmacogenomics
- ▶ Behavioral Aspects of Physical Activity

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Admissions

Admission Requirements

Applicants seeking admission to the CHLS graduate programs at HBKU should have a strong academic record (minimum 3.0 GPA out of 4) from a recognized university. Applicants to the Master of Science programs should have a bachelor's degree, while applicants to the PhD programs should have a master's degree.

Applicants to the MS or PhD programs in genomics and precision medicine or biological and biomedical sciences, biopsychology and neuroscience, should have a strong background in science and evidence of coursework in biological or medical sciences. Applicants seeking admission to the MS in Exercise Science program should have a bachelor's degree in exercise science or a related field (e.g. biological/biomedical sciences).

Applicants are required to submit a valid IELTS score of 6.5 or TOEFL score of 79 to demonstrate their proficiency in English. Further details about the language proficiency requirement and the process to seek exemption (if applicable) are available from admissions.hbku.edu.qa

Applicants with prior research experience are preferred, especially for the PhD programs.



Application Requirements

Application:

A completed online application form
admissions.hbku.edu.qa

Academic transcripts:

Official electronic copies of transcripts should be submitted as part of the online application. Final transcripts and graduation statements are required for all previous university studies. All transcripts submitted should include an explanation of the grading system. For those who have not completed their current studies, transcripts must include results from the last completed semester of coursework. Transcripts in languages other than English or Arabic must be accompanied with an official translation. Applicants who are admitted to the program based on copies of or incomplete transcripts will be required to provide original transcripts upon enrollment in order to register for courses.

Standardized test results:

Official copies (where required) must be sent directly to HBKU. Please refer to the institutional codes below:

- ▶ TOEFL: 4981
- ▶ IELTS: No code required. Students should ask the IELTS center where they tested to send the IELTS TRF to HBKU

Applicants should also submit copies of their test scores with the online application.

Letters of recommendation:

Applicants should submit letters of recommendation, preferably from academic referees:

- ▶ At least two letters of recommendation:
 - ▶ Biological and Biomedical Sciences programs
 - ▶ Genomics and Precision Medicine programs
- ▶ At least three letters of recommendation:
 - ▶ MS in Exercise Science program
 - ▶ PhD in Biopsychology and Neuroscience

Please visit admissions.hbku.edu.qa for further information about the submission process.

Personal statement of interest:

Applicants should submit a personal statement (300-500 words) as part of the online application. The statement should explain why the candidate is applying to the program and how their studies will contribute to the achievement of their personal objectives, including information about the applicant's research interests and achievements.

Resume/curriculum vitae:

Applicants should submit a copy of their current resume or curriculum vitae as part of the online application.

This should include the following information:

- ▶ Academic qualifications
- ▶ Professional experience
- ▶ Publications
- ▶ Research projects
- ▶ Academic awards or honors
- ▶ Conference presentations

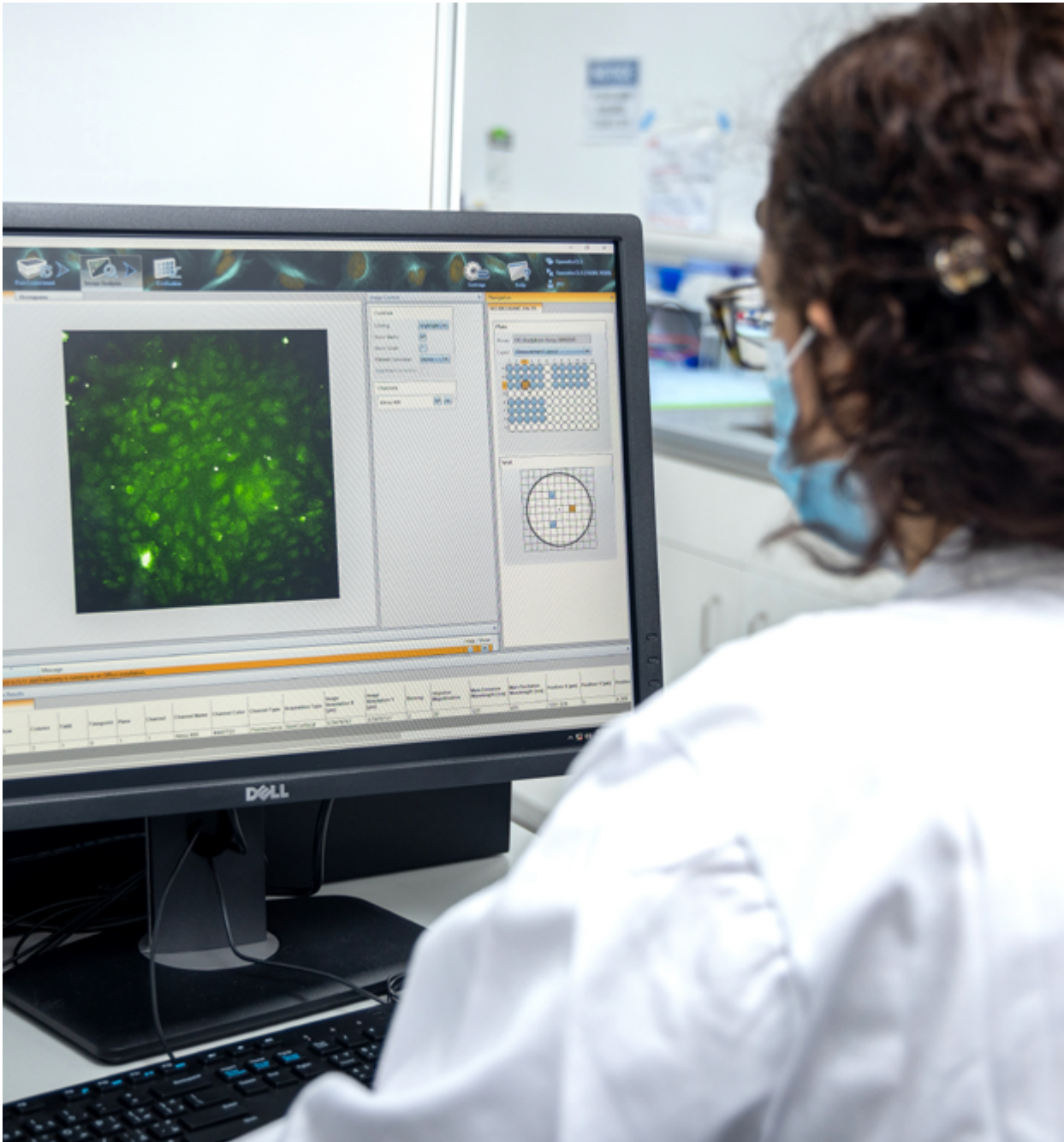
Identification document:

All applicants should submit an electronic copy of their passport as part of the online application. Nationals and residents of Qatar should also submit their valid Qatari ID.

Tuition and Student Funding

The College of Health and Life Sciences provides a limited number of tuition waivers on a competitive basis.

Program	Total Program Tuition Fees	Tuition Fees per Credit Hour	Total Program Credit Hours	Program Duration
PhD in Biological and Biomedical Sciences	QAR 273,750	QAR 5,069	54	3 years
PhD in Genomics and Precision Medicine	QAR 273,750	QAR 5,069	54	3 years
PhD Biopsychology and Neuroscience	QAR 273,750	QAR4562.5	60	4 years
Master of Science in Biological and Biomedical Sciences	QAR 182,500	QAR 5,530	33	2 years
Master of Science in Genomics and Precision Medicine	QAR 182,500	QAR 5,530	33	2 years
Master of Science in Exercise Science	QAR 182,500	NA	33	2 years



Contact Information

chls.hbku.edu.qa

Admission inquiries:

admissions.chls@hbku.edu.qa

General inquiries:

chls@hbku.edu.qa

P.O. Box: 34110

Doha – Qatar



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