Master of Science in Cybersecurity

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

Master of Science in Cybersecurity

Cybersecurity is a multidisciplinary field addressing issues that ensure secure and reliable operations at all levels of interconnected computing and networking systems. The Master of Science in Cybersecurity (MSC) is designed to train graduate scholars, professionals, entrepreneurs, leaders, and researchers in the advanced knowledge and skills required to fully understand and implement the technologies, tools, management methods, and policy issues related to cybersecurity.

This Master of Science program not only covers multidisciplinary fields related to cybersecurity technology but also examines policy, ethics, and management related to IT security and cyber threats. The program leverages strong partnerships and collaborations both within HBKU and beyond the university. The delivery of the program involves collaborations with HBKU's research institutes, most notably with QBRI.

This program also builds on work with industrial and governmental partners, both local and international, who are currently working on critical projects aimed to provide solutions to address global challenges and lead to a safer cyber world, in support of Qatar's aspirations in this area.

The program offers its students the option of either completing a research thesis or working on an industrial project. The thesis requires in-depth theoretical and research components, possibly leading to a scientific publication, co-authored by the student in a top publication, while the industrial project offers a route for students to further develop real-world problem-solving experience.

The program includes a core course in leadership and innovation, ensuring that all graduates are equipped with the skills and knowledge to assume leading roles within academic, governmental, and non-governmental organizations.

Program focus

- The development of extensive and advanced knowledge in the field of cybersecurity, covering major areas such as applied cryptography, computer and network security, secure software/hardware systems.
- A multi-faceted curriculum covering multidisciplinary aspects that are not only related to cybersecurity technology but also cover policy, management, and ethics.
- Hands-on experience with real-world projects related to secure software and hardware design and implementation, secure mobile systems, information security, risk analysis, and computer and network forensics, among others.
- A research thesis or industrial project involving original work related to cybersecurity, guided by world-class faculty members from HBKU, its research institutes, and other stakeholders.

Curriculum

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

- Four core courses that provide students coming from diverse backgrounds with a coherent learning environment to tackle issues in cybersecurity. The core courses are:
  - Research Methods and Ethics in ICT
  - Applied Cryptography
  - Computer and Network Security
  - Security Risk Analysis
- Four elective courses covering engineering and computer science topics, in addition to a variety of cybersecurity electives that provide students with a solid base and a depth of knowledge, which fully enable them to understand different aspects of cybersecurity. Additionally, there will be the opportunity to take an elective focusing on entrepreneurship.
- One semester of graduate research seminars aimed at expanding students' horizons by offering a broad range of topics, through talks by invited experts and presentations from those working in industry, research institutes, academia, and government institutions and organizations.
- A nine-credit research thesis or a six-credit industrial project.
- Selecting the industrial project would require the student to choose a further elective.

Admission and application requirements

Applicants seeking admission to the Master of Science in Cybersecurity program at HBKU should have a strong academic record (minimum 3.0 GPA out of 4.0) from a recognized university. They should have a bachelor's degree, and must have also majored in one of the following disciplines: computer science, information systems, engineering, mathematics, and related fields.

Applicants are required to submit an 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 (where this is an option) are available from admissions.hbku.edu.qa.

While the GRE is not required for admission to the master's programs at the College of Science and Engineering, a strong GRE score will help strengthen the applicant's admission material. Prior research experience will be seen as favorable.

Further information about admission requirements is available at: admissions.hbku.edu.qa

Application requirements

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 by 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:

- GRE: 7551
- GMAT: H6S
- TOEFL: 4981
- IELTS: No code required. Students should ask the IELTS center where they tested to send the IELTS TRF to Hamad Bin Khalifa University.

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

Letters of recommendation

Applicants should submit two letters of recommendation, one of which must be from an academic referee. 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. Personal statements that are incomplete or below the minimum word count will not be accepted.

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.

Student funding

The College of Science and Engineering provides opportunities for funding on a competitive basis. Further information will be provided to applicants who are admitted to the program.