



# Master of Data Analytics in Health Management

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A multidisciplinary program aimed at equipping students with knowledge of the latest advances in the tools and principles of big data handling and analysis and their application in managing the ever-growing health data.



As Qatar continues to expand its medical facilities in what is today the region's biggest health care expansion projects, the need for highly-trained data analytics specialists in digital health management continues to grow manifold.

The Master of Data Analytics in Health Management (MDA-HM) program is the very first of its kind in the world and aims to train talented scientists and researchers to effectively contribute to designing and implementing data analytic tools in healthcare systems in both Qatar and abroad.

## Overview:

The MDA-HM program aims to equip students with knowledge of the latest advances in the tools and principles of big data handling and analysis and their application in managing the ever-growing health data field.

During the course of their studies at the College of Science and Engineering (CSE), students will undergo specialized training that will equip them to develop advanced and effective strategies and policies to enhance preventive care, reduce per capita cost of patient care, and enhance progress in diagnostics and medical research leading to the development of more efficient health care systems. Uniquely, the program will also give students a myriad of opportunities to collaborate with professionals from relevant industrial and government sectors around the world, hence inspiring the student body with positive qualities of leadership, social consciousness, integrity and general ethics.

Major local and international organizations continue to grow their investments in the concept of big data analytics and use of business intelligence and technology to better serve their audiences. Furthermore, in a recent press report, the government of the State of Qatar underscored the need for greater mechanisms of data analysis.

As such, a key focus of the MDA-HM program will be to produce graduates who may go on to undertake

challenging roles as health data analysts, epidemiologists, biostatisticians and bioinformatics specialists, health care managers in health services in Qatar and abroad.

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## Program Focus

Combining data analytics with health care management for the first time, the MDA-HM program uniquely focuses on educating students on the latest advances in the tools and technologies involved in big data analytics for health management applications. Furthermore, the program aims to train students in various applied techniques, methodologies and tools to effectively manage and analyze the constant growths of health data in order to drive higher productivity in health care sector.

Enrolled students will:

- **Develop core knowledge in data analytics:** Students will acquire essential skills for scientific studies, research work and decision-making through undergoing core courses that include applied statistics, data analytics tools and methods as well as general methodologies, policies and ethics applied to different fields.
- **Master big data systems for multiple disciplines:** Students will explore the impact of examining big data, which are large datasets containing a variety of data types for health or other applications. Furthermore, students will be trained to master state-of-the-art tools and methodologies in uncovering hidden patterns, unknown correlations, market trends, customer preferences and other useful business information from big data.
- **Study ethics involved in data analytics:** Students will obtain a deep knowledge of today's health management systems and their pitfalls. Importantly, they will apply high ethical standards and propose draft policies for dealing with big data applied to health management. A key objective of the MDA-HM program is to foster a strong understanding of health management values, policies, challenges, opportunities as well as their impact on health.

## Curriculum:

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

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- **Four core courses (12 credits)**
  1. Data Science tools and Applications
  2. Statistics for Science and Engineering
  3. Principles of Health Informatics
  4. Research Methods and Ethics
- **Four elective courses in which at least 2 courses need to be taken from the College of Health and Life Sciences with emphasis on health management**

- **Research Thesis (9 credits)**

- **Applied project (6 credits) and an extra elective course**

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