GENOMICS AND PRECISION MEDICINE, PHD

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.

For more information, click here (https://www.hbku.edu.qa/en/chls/phd-genomics-precision-medicine/).

Requirements

Minimum hours required to complete program 60 CH

Code	Title	Hours
Core Courses		
GPM 705	Introduction to Data Science	3
Subtotal		3
Elective Courses		
Select five of the following:		15
AIE 633	Islamic Bioethics	
CLS 600	Techniques in Biochemistry	
CLS 625	Applied Biostatistics	
CLS 726	Proteomics in Precision Medicine	
CLS 751	Molecular Mechanisms of Cancer and Their Applications	
DSEG 660	Applied Deep Learning	
DSEG 760	Machine Learning	
GPM 601	Research Methods and Ethics in Health and Genomics	
GPM 602	Clinical Applications in Genomics and Precision Medicine	
GPM 604	Advanced Genetics	
GPM 607	Molecular Pathology	
GPM 720	Pharmacogenomics	
GPM 721	Bioinformatics	
GPM 733	Epigenetics	
ICT 665	Artificial Intelligence and Machine Learning in Healthcare	
ICT 666	Computational Bioinformatics	
ICT 716	Data Science Tools and Applications	
LAW 753	Healthcare Law	
LS 603	Advanced Molecular Biology	
LS 607	Advanced Human Physiology	
LS 714	Scientific Communication and Professional Development	
CLS 706	Independent Studies	
Subtotal		15
Free Electives		
Can select a maximum of one of the following:		
CLS 661	Special Topics in Biosensors	
CLS 711	Development and Diseases of The Nervous System	
CSE 785	Innovation Entrepreneurship and Leadership I	
EPID 700	Introduction to Epidemiology	
EXSC 710	Behavioral Aspects of Physical Activity	
EXSC 780	Physiology of Exercise	
LS 605	Advanced Cell Biology	
LS 708	Advanced Neuroscience	
LS 709	Molecular and Cellular Biology of Neurodegenerative Diseases	
LS 710	Cancer Biology	
LS 712	Cancer Immunology	
LS 713	Behavior, Learning and Memory	
LS 715	Physiopathological Mechanisms of Neurogenetic Diseases	
LS 740	Stem Cell Biology	
LS 741	Signal Transduction in Health and Diseases	
LS 742	Advances in Human Metabolism and Disease	
LS 751	Immunology and Immunogenomics	
Seminar		
Must pass twice		
LS 701	Research Seminar	0
Subtotal		0
Dissertation		
GPM 890	Dissertation Hours	1-9
Subtotal		42
Non-Course Requirements		
899	Dissertation Defense	
799	Candidacy Exam	
790	Qualifying Exam	
Total Hours		**60**

Study Plan

Course	Title	Hours
First Year		
First Semester		
LS 701	Research Seminar	0
Elective 1		3
Elective 2		3
Elective 3		3
	Semester Hours	**9**
Second Semester		
GPM 705	Introduction to Data Science	3
LS 701	Research Seminar	0
Elective 4		3
Elective 5		3
	Semester Hours	**9**
Second Year		
First Semester		
GPM 890	Dissertation Hours	9
	Semester Hours	**9**
Second Semester		
GPM 890	Dissertation Hours	9
	Semester Hours	**9**
Third Year		
First Semester		
GPM 890	Dissertation Hours	9
	Semester Hours	**9**

Second Semester

GPM 890	Dissertation Hours	9
	Semester Hours	**9**

Fourth Year

First Semester

GPM 890	Dissertation Hours	6
	Semester Hours	**6**
	Total Hours	**60**