

## Master of Medical Sciences College of Medicine & Health Sciences

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# Master of Medical Sciences

## College of Medicine & Health Sciences

### Overview

The Master of Medical Sciences programs are designed to cater to the needs and aspirations of individual students, the expressed needs of the relevant institutions in the UAE, and the current strengths in different disciplines in the CMHS. Currently the structure of the M. Med. Sc. curriculum is organized into three tracks: "Microbiology & Immunology", "Pharmacology and Toxicology" and "Biochemistry and Molecular Biology (BMB)".

1- Biochemistry & Molecular Biology The Biochemistry and Molecular Biology track is a multi-disciplinary program which provides students with a foundation in Biochemistry and Molecular and Cellular Biology as well as intensive state-of-the-art laboratory research training. Research areas in the Biochemistry Department focus on the Biochemical, Molecular and Cellular basis of human diseases including Cancer Biology, Diabetes, and Neurodegenerative disorders, in addition to areas in Gene Regulation, Bioinformatics, Proteomics, Epigenetic, Signal Transduction, Oxidative Stress, Mitochondrial Dysfunction, and Immunology and Biochemical Toxicology.

2- Microbiology & Immunology The Microbiology and Immunology track provides students with core knowledge at the respective levels in basic immunology, the pathogenesis of autoimmune and infectious diseases, the molecular details of host-pathogen interactions, the molecular biology and molecular epidemiology of selected pathogens, and the genetic manipulation of pathogens.

3- Pharmacology & Toxicology The Department of Pharmacology and Therapeutics offers a multidisciplinary program designed to prepare highly qualified individuals to be successful scientists in academic and industrial biomedical research. The pharmacology and toxicology faculty members carry out research in cancer pharmacology, neuropharmacology, cardiovascular pharmacology, drug metabolism, toxicology, proteomics, molecular pharmacology, receptors and signal transduction, and drug design.

### Program Objectives

- Biomedical Knowledge.
- Interpersonal & Communication Skills.
- Scholarly Research.
- Professionalism and ethics.
- Publications and presentations.

### Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Apply the knowledge of biomedical sciences in their scholarly activities.
- Demonstrate communication skills (with peers and colleagues) that are effective in the exchange and translation of knowledge and information.
- Apply professional ethics and commitment to their scholarly activities.
- Engage in collaborative health science research.
- use quantitative and qualitative methods present and defend their scientific research findings
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### Degree Requirements

Required Credit Hours : minimum 36 hours

### General Requirements

Required Courses (8 hours )		Credit Hours
PRR600	Principles of Research	1
ETHC600	Ethical Conduct in Medical Research	1
STA600	Biostatistics & Experimental Design	2
JRC601	Biomedical Sc Journal Club I	1
JRC602	Biomedical Sc. Journal Club II	1
SEM601	Biomedical Sc. Seminar I	1
SEM602	Biomedical Sc. Seminar II	1

### Biochemistry and Molecular Biology Track

Required Courses (9 hours )		Credit Hours
BMB601	Techniques in Biochemistry	2
BMB602	Advanced Molecular Biology	3
BMB603	Advanced Cell Biology	2
BMB604	Advanced Topics in Biochemistry	2

### Microbiology and Immunology Track

Required Courses (6 hours )		Credit Hours
MMIM601	Molecular Bacteriology – Gene, Structure, Pathogenesis	2
MMIM602	Principles of Cellular and Molecular Immunology	2
MMIM603	Molecular Principles of Viral Replication and Pathogenesis	2

### Pharmacology and Toxicology Track

Required Courses (8 hours )		Credit Hours
PHTX601	General Systemic Pharmacology	2
PHTX602	Molecular Mechanism of Drug Action	2
PHTX603	Neurotransmitters in Health and Diseases	2
PHTX604	Molecular Principles of Organ Toxicity	2

### Thesis/Project (CH. Req. 4 to 18)

18 Credit Hours for Thesis option and 4 Credit Hours for non-thesis option (18 hours )		Credit Hours
RSCH600	MResearch 1	18
RSCH601	Research Project 2	4
1 : Thesis Only - 2 : Non-Thesis Only		

### Elective Courses (CH. Req. 18-1)

(Thesis option: 1 CH. for BM track, 4 CHs. for MI track, 2 CHs. for PT track) (Non-Thesis option: 15 CHs. for BM track, 18 CHs. for MI track, 16 CHs. for PT track) (18 hours )		Credit Hours
BMB603	Advanced Cell Biology	2
BMB604	Advanced Topics in Biochemistry	2
BMB606	Special topics in Biochemistry	1
PHTX619	Advances in Pharmacology	1
PHTX601	General Systemic Pharmacology	2
PHTX604	Molecular Principles of Organ Toxicity	2
PHTX624	Modern Medicinal Chemistry and Drug Design	1
PHY601	Human Physiology 1	2
PHY602	Human Physiology 2	2
PHY603	Human Physiology 3	2
PHY611	Advanced Electrophysiology	2
MMIM603	Molecular Principles of Viral Replication and Pathogenesis	2
MMIM605	Gene Therapy	1
MMIM606	Molecular Techniques Viral Pathogenesis	1
MMIM607	Antibiotics and Antibiotic Resistance	1
MMIM608	Immune-Mediated Diseases	2
MMIM609	Microbiome in health and disease	2
MGEN601	Human Genetics	2
CANB601	Basic Cancer Biology	2
ANAT605	Human Gross Anatomy	3
MMIM612	Basic Medical Parasitology and Entomology	2
MMIM620	Emerging bacterial infectious diseases	2

### Tuition Fees:

1,600 AED Per Credit Hour  
 200 AED Application Fee.  
 Total= (36\*1,600) + 200= AED 57,800

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