

Master of Science Program in Medical Science

Research Focus

- Medical Science Technology
- Medical Molecular Biology
- Medical Nanotechnology
- Medical Biomaterial Technology
- Nutrition and Food
- Environmental Health
- Public Health Management

Structure of the Program

1. Credit Requirements *

Requirements	Option 1.1	Option 1.2
Coursework	-	24
- Core Courses	-	9
- Electives		15
Required Non-credit Courses	5	5
Thesis	36	12
Total	36	36

* Minimum credits required

2. Core Courses

Requirements	Option 1.1		Option 1.2	
	Course No.	Cr.	Course No.	Cr.
Research Methodology in Health Sciences	-	-	422511	3
Cell Biology <i>or</i> Biochemistry, Cell and Molecular Biology *	-	-	422513/ 422514	3
Current Topics in Medical Science	-	-	422594	3
Total	-	-	3	9

* Choose one

3. Electives

Requirements	Option 1.1		Option 1.2	
	Course No.	Cr.	Course No.	Cr.
Medical Science:				
Advanced Scientific Instrumentation	-	-	422520	3
Advanced Protein Chemistry and Proteomics	-	-	422522	3
Proteases in Human Diseases	-	-	422526	3
Modern Technologies for Pharmacogenomics	-	-	422527	3
Stem Cells in Health and Therapy	-	-	422528	3
Medical Nanotechnology	-	-	422529	3
Biochemistry of Signal Transduction and Regulation	-	-	422532	3
Cell Culture for Medical Sciences	-	-	422533	3
Physiology:				
Respiratory Physiology	-	-	421521	2
Renal Physiology	-	-	421522	2
Gastrointestinal Physiology	-	-	421523	2
Endocrine Physiology	-	-	421524	2
Basic Neuroscience	-	-	421525	2
Applied Vascular Physiology	-	-	421526	2
Cardiovascular Physiology	-	-	421527	2
Cellular Physiology	-	-	421528	2
Electrophysiology of Ion Channel	-	-	421529	2
Applications in Exercise Physiology	-	-	421530	2
Physiology of Aging and Rejuvenation	-	-	421531	2
Applied Nutrition Science in Health and Disease	-	-	421532	2
Use of Laboratory Animals and Animal Ethics	-	-	421533	2
Research Project in Physiology	-	-	421534	5
Anatomy:				
Anatomical Laboratory of Circulatory System	-	-	419513	1
Anatomical Laboratory of Musculoskeletal System	-	-	419514	1
Anatomical Laboratory of Respiratory System	-	-	419515	1
Anatomical Laboratory of Urinary System	-	-	419516	1
Anatomical Laboratory of Digestive System	-	-	419517	1
Anatomical Laboratory of Reproductive System	-	-	419518	1

Requirements	Option 1.1		Option 1.2	
	Course No.	Cr.	Course No.	Cr.
Research Methods in Anatomical Sciences	-	-	419519	2
Neuropharmacology	-	-	419522	2
Neurochemistry	-	-	419523	2
Electron Microscopy	-	-	419534	1
Image Analysis for Research	-	-	419535	1
Immunohistochemical Technique	-	-	419536	1
Human Embryology	-	-	419541	2
Cell and Tissue Culture Laboratory	-	-	419543	1
Advanced Human Genetics	-	-	419544	2
Current Topics in Anatomy	-	-	419594	1
Biochemistry:				
Research Project in Biochemistry	-	-	418511	2
Protein Studies	-	-	418512	3
Current Topics in Biochemistry and Related Fields	-	-	418513	2
Biochemistry of Human Genetic Disorders	-	-	418521	3
Biochemistry and Molecular Biology of Cancer	-	-	418522	3
Advanced Medical Molecular Biology	-	-	418523	3
Viral Biochemistry	-	-	418524	2
Biochemistry of Nutrition and Chemopreventives	-	-	418525	3
Nutrigenomics	-	-	418526	3
Biochemical Toxicology	-	-	418527	3
Human Molecular Genetics	-	-	418528	3
Plant Biochemistry	-	-	418531	3
Biochemistry and Molecular Biology of Plant Development	-	-	418532	3
Molecular Biology and Genetics Techniques in Plant Study	-	-	418533	3
Physiological and Molecular Basis of Plant Hormones	-	-	418534	3
Physiological and Molecular Basis of Plant Stress Responses	-	-	418535	3
Chemoinformatics for Biochemical Studies	-	-	418536	3
Bioinformatics for Biochemical and Molecular Biological Studies	-	-	418537	3

Requirements	Option 1.1		Option 1.2	
	Course No.	Cr.	Course No.	Cr.
Molecular Data Mining	-	-	418538	3
Bioinformatics Programing	-	-	418539	3
Medical Microbiology:				
Medical Microbiology	-	-	266511	3
Diagnostic Medical Microbiology	-	-	266512	3
Microbiology for Public Health and Sanitation	-	-	266513	3
Advanced Immunology	-	-	266514	3
Advanced Medical Virology	-	-	266515	3
Advanced Medical Bacteriology	-	-	266516	3
Advanced Medical Mycology	-	-	266517	3
Medical DNA Technology	-	-	266518	3
Microbial Forensics	-	-	266519	3
Applied Microbiology:				
Advanced Microbial Physiology	-	-	266502	3
Research Techniques in Molecular Biology and Microbiology	-	-	266503	3
Selected Topics in Microbiology	-	-	266504	3
Bioinformatics	-	-	266506	3
Quantitative Predictive Microbiology	-	-	266507	3
Advanced Microbial Genetics	-	-	266508	3
Microbial Food Safety	-	-	266509	3
Microbiology of Wastewater Treatment	-	-	266521	3
Microbial Biotechnology	-	-	266522	3
Advanced Microbial Enzyme Technology	-	-	266523	3
Microbial Cell Immobilization	-	-	266524	3
Biotechnological Applications of Actinomycetes	-	-	266525	3
Fungal Biotechnology	-	-	266526	3
Microbial Ecology	-	-	266531	3
Pollution Microbiology	-	-	266532	3
Microbial Degradation and Deterioration	-	-	266533	3
Microbial Diversity and Phylogeny	-	-	266534	3
Total	-	-	≥5	≥15

4. Required Non-credit Courses

Requirements	Option 1.1		Option 1.2	
	Course No.	Cr.	Course No.	Cr.
Research Methodology in Health Sciences	422510	3	422510	3
Seminar 1	422595	1	422595	1
Seminar 2	422596	1	422596	1
Total	3	5	3	5

5. Thesis Credit Requirements

Requirements	Option 1.1		Option 1.2	
	Course No.	Cr.	Course No.	Cr.
Thesis 1, Option 1.1	422551	9	-	-
Thesis 2, Option 1.1	422552	9	-	-
Thesis 3, Option 1.1	422553	9	-	-
Thesis 4, Option 1.1	422554	9	-	-
Thesis 1, Option 1.2	-	-	422561	4
Thesis 2, Option 1.2	-	-	422562	4
Thesis 3, Option 1.2	-	-	422563	4
Total	4	36	3	12