

# Cellular & Molecular Biology Track Curriculum

## FALL YEAR 1

<u>Course #</u>	<u>Course Name</u>	<u>Credit Hours</u>	<u>Graded Hours</u>
MSCI 601**	Principles of Basic Medical Sciences I	5	5
MPHY 601	Methods in Cell Physiology	4	4
or	or	or	or
BICH 605	Methods in Biochemical Analysis	3	3
or	or	or	or
SBTM 616	Computational Systems Biology I	3	3
MSCI 689**	Ethics in Biomedical Research	1	1
MSCI 685	Lab Rotation I & II		
	Semester Hours	9-10	9-10
	Cumulative Hours	9-10	9-10

\*\* Required

## SPRING YEAR 1

<u>Course #</u>	<u>Course Name</u>	<u>Credit Hours</u>	<u>Graded Hours</u>
MSCI 610**	Pathogenesis of Human Disease	4	4
	Core Course / Elective	3-4	3-4
MSCI 685	Lab Rotation III & IV	1-2	1-2
	Semester Hours	9	8-10
	Cumulative Hours	18-19	17-20

## SUMMER YEAR 1

<u>Course #</u>	<u>Course Name</u>	<u>Credit Hours</u>	<u>Graded Hours</u>
STAT 651	Statistics in Research	3	3
or	or		
Elective	Directed Study	3	3
MSCI 691	Research	3	0
	Semester Hours	6	3
	Cumulative Hours	24-25	20-22

## FALL YEAR 2

<u>Course #</u>	<u>Course Name</u>	<u>Credit Hours</u>	<u>Graded Hours</u>
BICH /GENE 631	Biochemical Genetics	3	6-9
	or	or	or
	Elective	3	3
MSCI 691	Research	0-3	0-3
	Semester Hours	9	6-8
	Cumulative Hours	33-34	26-30

## SPRING YEAR 2

<u>Course #</u>	<u>Course Name</u>	<u>Credit Hours</u>	<u>Graded Hours</u>
MSCI 681	Seminar	1	0
MCMD 689	Human Genes in Disease	3	3
	Elective	3	3
MSCI 691	Research	2	0
	Semester Hours	9	6
	Cumulative Hours	42-43	32-36

## SUMMER YEAR 2

<u>Course #</u>	<u>Course Name</u>	<u>Credit Hours</u>	<u>Graded Hours</u>
MSCI 691	Research	6	0
	Semester Hours	6	0
	Cumulative Hours	48-49	32-36

## FALL YEAR 3

<u>Course #</u>	<u>Course Name</u>	<u>Credit Hours</u>	<u>Graded Hours</u>
MSCI 691	Research	9	0
	Semester Hours	9	0
	Cumulative Hours	57-58	32-36

### SPRING YEAR 3

<u>Course #</u>	<u>Course Name</u>	<u>Credit Hours</u>	<u>Graded Hours</u>
MSCI 691	Research	9	0
	Semester Hours	9	0
	Cumulative Hours	66-67	32-36

### SUMMER YEAR 3

<u>Course #</u>	<u>Course Name</u>	<u>Credit Hours</u>	<u>Graded Hours</u>
MSCI 691	Research	6	0
	Semester Hours	6	0
	Cumulative Hours	72-73	32-36

### FALL YEAR 4

<u>Course #</u>	<u>Course Name</u>	<u>Credit Hours</u>	<u>Graded Hours</u>
MSCI 691	Research	9	0
	Semester Hours	9	0
	Cumulative Hours	81-82	32-36

### SPRING YEAR 4

<u>Course #</u>	<u>Course Name</u>	<u>Credit Hours</u>	<u>Graded Hours</u>
MSCI 691	Research	9	0
	Semester Hours	9	0
	Cumulative Hours	90-91	32-36

### SUMMER YEAR 4

<u>Course #</u>	<u>Course Name</u>	<u>Credit Hours</u>	<u>Graded Hours</u>
MSCI 691	Research	5	0
MSCI 681	Seminar	1	
	Semester Hours	6	0
	Cumulative Hours	96-97	32-36

**\*CORE COURSES - \*Must be Completed by the End of YEAR 2**

<u>Course #</u>	<u>Course Name</u>	<u>Credit/Graded Hours</u>
MSCI 601	Principles of Basic Medical Sciences I	5
MSCI 689	Ethics and Issues in Biomedical Research	1
MCMD 689	Human Genes in Disease	3
or	or	
BICH / GENE 631	Biochemical Genetics	3
STAT 651	Statistics in Research I	3
or	or	
SBTM 616	Computational Systems Biology I	3
MSCI 610	Pathogenesis of Human Disease	4

**ELECTIVES**

<u>Course #</u>	<u>Course Name</u>	<u>Credit/Graded Hours</u>
ANSC / VTPP 654	Molecular Endocrinology	3
BICH 601	Fundamentals of Biochemistry I	3
BICH 608	Critical Analysis of the Biochemical Literature	3
BICH 672	Biological Membranes	1
BICH 624	Enzymes, Proteins, and Nucleic Acids	3
BIOL 611	Molecular Biology of Differentiation and Development	3
BIOL 613	Cell Biology	1-5
BIOL 614	Signaling and Development	3
BIOL 651	Bioinformatics	3
BIOL 670	The Cell Cycle	1
BIOL 674	Cellular & Molecular Aspects of Development	3
MBCH 625	Nucleic Acid / Protein Interactions	1
MBCH 671	Macromolecular Folding / Design	3
MICR 620	Mechanisms of Transcription Initiation	3
MMIM 601	Microbial Pathogenesis	3
MSCI 612	Current Topics in Cell Signaling	3
SBTM 615	Pathobiology and Therapeutics	4
STAT 652	Statistics in Research II	3
VAPH 640	Neurobiology	1-5
VIBS 617	Cell Biology	1-5
VTMI 649	Immunology	3
VTMI/MMIM 663	Molecular Virology	3
VTPP 677	Fluorescence Detection: Steady State, Time Resolved and Imaging	3
VTPP 676	Genetic & Molecular Toxicology	3
ZOOL 601	Biological Clocks	3