

MD PhD Max Planck Transferable Credits	
Medical Curriculum, M1 year:	IB Graduate Curriculum, P1 year:
Summer Research Experience	Advanced Research in Integrative Biology (BSC 7978; 1 credit)
Fundamentals of Biomedical Science (BMS 6031; 21 credits)	Integrated Morphology I (BMS 6102C; 4 credits) Integrated Morphology II (BMS 6104C; 4 credits)

MD/MS Transferable Credits		
Year 1	Graduate Equivalent	Transferable Credit to MS Biomedical Science
BMS 6031 Fundamentals of Biomedical Science - 21 credits Provides students with a broad function in critical biomedical science subject areas, including biochemistry, molecular biology, cell biology, genetics, pharmacology, pathology, physiology, histology, anatomy and embryology.	Advanced Molecular and Cellular Biology (PCB 5532) 3 credits Advanced Cell Physiology (PCB 6207) 3 credits Fundamentals of General Pathology (BMS 6601) 3 credits Advanced Pharmacology (GMS 6551) 3 credits Pharmacology (GMS 6513) 3 credits Principles of Neuroimmunology (GMS 6708) 3 credits Human Genetics (PCB 6665) 3 credits	21 credits
Year 2	Graduate Equivalent	Transferable Credit to MS Biomedical Science
Pathophysiology and Therapeutics 2 (BMS 6542) 11 credits An 11-week course in the fall semester of year two. Provides the basic concepts and vocabulary in the areas of the anatomy, chemistry, histology, microbiology, pathology, pharmacology and physiology of the cardiovascular system, the respiratory system and related components of the hematologic system.	Biomedical Science Core Technologies Laboratory (GMS 6091C) 3 credits	3-credits

MASTER'S PROGRAM

BIOMEDICAL SCIENCE

MASTER OF SCIENCE (M.S.)

(Minimum of 30 credits required)

Students interested in pursuing advanced studies in biomedical science may obtain a degree of [Master of Science \(M.S.\) with Major in Biomedical Science](#), taking either the thesis or non-thesis option. The thesis option is oriented toward those students interested in pursuing biomedical research or careers in academia. The non-thesis program is an option for students seeking to solidify their knowledge base in order to apply to appropriate professional schools or pursue careers in the biomedical sciences industry.

Admission Requirements

All program applicants must have an undergraduate grade point average of 3.0 in the last 60 credits and competitive Graduate Record Exam (GRE) scores (scores are valid for five years). These are minimum requirements that are necessary for consideration for admission to the program. Higher scores will increase applicants' chances for admission. Prerequisites of the master's degree program include one year each of biology, chemistry and physics; one semester each of biochemistry and organic chemistry; and at least two upper-division biology classes. A personal statement explaining career goals is required as well as three letters of recommendation, at least two of which must be from former professors.

Recency of Credits

No credit that is more than seven years old at the time the M.S. in Biomedical Science degree is awarded may be counted toward the degree.

Degree Requirements

Non-Thesis Option

This option requires a minimum of 30 graduate-level credits. With their advisor's approval, students design a course of study courses offered in the Charles E. Schmidt College of Medicine as well as courses in related departments and colleges chosen from the following list.

Thesis Option

This option requires a minimum of 30 credits consisting of coursework chosen from the list below, a minimum of 6 thesis credits, 3 thesis-related research

credits. Students design a course of study and research with the guidance and approval of the advisors and thesis committees. Thesis students are required to make a formal research proposal to their committees within their first year prior to enrollment in thesis credits. In addition, upon completion of their research, they must make a formal thesis presentation and defense in the semester they plan to graduate. All thesis students must also receive certification of completion of the Responsible Conduct of Research program. The RCR program, which is offered jointly through the Graduate College and Division of Research, covers the nine instructional areas of RCR. All four components are mandatory in order to receive certification of completion.

Students wishing to change their admission from the thesis option to the non-thesis option must submit to the Graduate Program Committee a letter of request that states the justification for the change and a letter from the thesis advisor in support of the request. An interview with the Graduate Program Committee may be required. A maximum of 6 credits from the thesis career can be applied toward the non-thesis career upon approval by the Graduate Program Committee. PCB 6974 and PCB 6971 credits are non-transferable.

Core (9 credits)

Data Interpretation and Analysis in the Age of Precision Medicine	GMS 6860
Advanced Molecular and Cellular Biology	PCB 5532
Human Genetics	PCB 6665

Thesis Requirements (9 credits minimum)

Master's Thesis <i>(may be taken multiple times; 6 credits minimum; 12 credits maximum)</i>	PCB 6971
Thesis-Related Research <i>(may be taken only twice; 3 credits minimum; 6 credits maximum)</i>	PCB 6974

Thesis Option for MD Students

MD Students can complete a MS Biomedical Science degree thesis track. MD students will be able to transfer 24 credits earned in their Year 1 and Year 2 curriculum towards the MS degree. They will then take 6 thesis credits as a capstone experience and be required to complete all thesis requirements for the MS Biomedical Science thesis track. The following MD courses are transferable for the MS Biomedical Science degree:

MD Year 1 and Year 2 (24 credits)

<u>Fundamentals of Biomedical Science</u>	<u>BMS 6031</u>	<u>21</u>
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Pathophysiology and Therapeutics 2

BMS 6542

3

Thesis Requirements (6 credits minimum)

Master's Thesis

PCB 6971

6

(may be taken multiple times; 6 credits minimum; 12 credits maximum)