

# COMPARATIVE BIOMEDICAL SCIENCES, M.S.

## REQUIREMENTS

### MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (<http://guide.wisc.edu/graduate/#policiesandrequirements>), in addition to the program requirements listed below.

### MAJOR REQUIREMENTS

#### MODE OF INSTRUCTION

Face to Face	Evening/Weekend	Online	Hybrid	Accelerated
Yes	No	No	No	No

#### Mode of Instruction Definitions

**Accelerated:** Accelerated programs are offered at a fast pace that condenses the time to completion. Students are able to complete a program with minimal disruptions to careers and other commitments.

**Evening/Weekend:** Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

**Face-to-Face:** Courses typically meet during weekdays on the UW-Madison Campus.

**Hybrid:** These programs combine face-to-face and online learning formats. Contact the program for more specific information.

**Online:** These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

### CURRICULAR REQUIREMENTS

#### Requirements Detail

Minimum Credit Requirement 30 credits

Minimum Residence Credit Requirement 16 credits

Minimum Graduate Coursework Requirement Half of degree coursework (15 credits out of 30 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (<https://registrar.wisc.edu/course-guide>)).

Overall Graduate GPA Requirement 3.00 GPA required.

Other Grade Requirements Students must earn a B or above in all major coursework.

**Assessments and Examinations** After the committee is chosen, the student must submit certification paperwork that details the intended coursework plan, the committee members' names and signatures, a short explanation of why they were chosen and an appended research plan. Certification plans will be reviewed and approved by the program academic committee.

Students are expected to meet with their committee at least once per year until degree completion.

Candidates are required to author a thesis based on original work, or, at the option of the major professor and with the approval of the thesis committee, the equivalent in the form of a substantial paper suitable for publication. The thesis or paper must be approved by the student's committee at least two weeks prior to the final examination. A final public presentation, followed by an oral exam in front of their committee and official deposit of the thesis with the Graduate School is not required.

**Language Requirements** No language requirements.

### REQUIRED COURSES

- 9 didactic credits (6 credits of advanced coursework may be transferred as approved by your thesis committee and the academic committee provided they are defined as graduate level). Credits from undergraduate courses taken at UW-Madison may be transferred if at the graduate level.
- 1 credit of PATH-BIO 930 Advanced Seminar (research seminar)
- For students who enter fall 2016 or later: Masters students must register for two semesters of PATH-BIO 930 Advanced Seminar and present once during their second semester. MS students will take the course P/S/U (Progress/Satisfactory/Unsatisfactory) if not presenting.
- 19 (minimum) research 990 credits
- Thesis or publishable work approved by your major professor and committee (official deposit is not required) of work based on original research and defended before your committee.
- Certification submitted and approved by your thesis committee and the academic committee.

#### Approved and Recommended Courses

The following is a list of core courses taken by many students and recommended courses that are appropriate to specific research areas. These courses are suggestions only; the student and their committee ultimately decide the best coursework plan for each student's specific program, with final approval from the program's academic committee. Students are responsible for determining that the coursework chosen meets the Graduate School's criteria for graduate work.

Code	Title	Credits
<b>Recommended Course</b>		
SURG SCI 812	Research Ethics and Career Development	2

Any other science-based ethics course

#### Core Courses

These courses are chosen by many students to fulfill their major coursework plan

GENETICS 466	Principles of Genetics	3
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PATH-BIO/HORT 500	Molecular Biology Techniques	3	NTP/ NEURODPT 610	Cellular and Molecular Neuroscience	4
PATH-BIO 773		3	NTP/NEURODPT/ PSYCH 611	Systems Neuroscience	4
BIOCHEM 501	Introduction to Biochemistry	3	<i>Toxicology and Pharmacology</i>		
BIOCHEM/ GENETICS/ MICROBIO 612	Prokaryotic Molecular Biology	3	COMP BIO 555	Veterinary Toxicology	2
BIOCHEM/ GENETICS/ MD GENET 620	Eukaryotic Molecular Biology	3	<i>Oncology</i>		
BIOCHEM/PHMCOL- M/ZOOLOGY 630	Cellular Signal Transduction Mechanisms	3	ONCOLOGY 675	Advanced or Special Topics in Cancer Research	1-3
ZOOLOGY 570	Cell Biology	3	ONCOLOGY 703	Carcinogenesis and Tumor Cell Biology	3
PATH 750	Cellular and Molecular Biology/ Pathology	2-3	<i>Virology</i>		
PATH 751	Cell and Molecular Biology of Aging	3	PATH-BIO 513	Veterinary Virology	2
STAT/F&W ECOL/ HORT 571	Statistical Methods for Bioscience I and Statistical Methods for	8	BIOCHEM/ M M & I 575	Biology of Viruses	2
& STAT/F&W ECOL/ HORT 572	Bioscience II		ONCOLOGY/ PL PATH 640	General Virology-Multiplication of Viruses	3
<b>Courses from which Students Build Disciplinary Strength</b>			M M & I/PATH- BIO 750	Host-Parasite Relationships in Vertebrate Viral Disease	3
<i>Epidemiology</i>					
PATH-BIO 512	Introduction to Veterinary Epidemiology	2			
POP HLTH/SOC 797	Introduction to Epidemiology	3			
POP HLTH 802	Advanced Epidemiology: Etiology and Prevention	3			
<i>Physiology</i>					
AN SCI/DY SCI 434	Reproductive Physiology	3			
COMP BIO 551	Veterinary Physiology A (fall)	4			
COMP BIO 506	Veterinary Physiology B (spring)	4			
ZOOLOGY 611	Comparative and Evolutionary Physiology	3			
ZOOLOGY/AN SCI/ OBS&GYN 954	Seminar in Endocrinology- Reproductive Physiology	1			
<i>Infectious Disease and Immunology</i>					
PATH-BIO 510	Veterinary Immunology	3			
PATH-BIO 514	Veterinary Parasitology	3			
PATH-BIO 517	Veterinary Bacteriology and Mycology	4			
PATH-BIO 513	Veterinary Virology	2			
PATH-BIO/ M M & I 528	Immunology	3			
PATH-BIO/ M M & I 750	Host-Parasite Relationships in Vertebrate Viral Disease	3			
PATH-BIO 773		3			
M M & I/PATH- BIO 720	Advanced Immunology: Critical Thinking	3			
M M & I/PATH- BIO 790	Immunology of Infectious Disease	3			
<i>Neuroscience</i>					
COMP BIO 505	Veterinary Neuroanatomy and Neurophysiology	3			
ZOOLOGY/ PSYCH 523	Neurobiology	3			