

# 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 typically take enough credits aimed at completing the program in a year or two.

**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

Requirement	Detail
Minimum Credit Requirement	30 credits
Minimum Residence Credit Requirement	16 credits
Minimum Graduate Coursework Requirement	15 credits must be graduate-level coursework. Details can be found in the Graduate School's Minimum Graduate Coursework (50%) policy ( <a href="https://policy.wisc.edu/library/UW-1244">https://policy.wisc.edu/library/UW-1244</a> ).

Overall	3.00 GPA required.
Graduate GPA Requirement	This program follows the Graduate School's policy: <a href="https://policy.wisc.edu/library/UW-1203">https://policy.wisc.edu/library/UW-1203</a> ( <a href="https://policy.wisc.edu/library/UW-1203/">https://policy.wisc.edu/library/UW-1203/</a> ).

**Other Grade Requirements** Students must earn a B or above in all 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 submitted to the student's committee two weeks before the final exam. A final public presentation, followed by an oral exam in front of their committee are required. Official deposit of the thesis with the Graduate School is not required.

**Language Requirements** No language requirements.

### REQUIRED COURSES

- 9 didactic credits.
- Master's 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

### 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		
<b>Core Courses</b>		
These courses are chosen by many students to fulfill their major coursework plan		
GENETICS 466	Principles of Genetics	3
BIOCHEM 501	Introduction to Biochemistry	3
BIOCHEM/ GENETICS/ MICROBIO 612	Prokaryotic Molecular Biology	3

BIOCHEM/ GENETICS/ MD GENET 620	Eukaryotic Molecular Biology	3
BIOCHEM 630		3
ZOOLOGY 570	Cell Biology	3
PATH 750	Cellular and Molecular Biology/ Pathology	2-3
PATH 751	Biology of Aging	2
STAT/F&W ECOL/ HORT 571 & STAT/F&W ECOL/ HORT 572	Statistical Methods for Bioscience I and Statistical Methods for Bioscience II	8

### Courses from which Students Build Disciplinary Strength

#### *Epidemiology*

PATH-BIO 512	Introduction to Veterinary Epidemiology	2
POP HLTH/ SOC 797	Introduction to Epidemiology	3

#### *Physiology*

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

#### *Infectious Disease and Immunology*

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
M M & I/PATH- BIO 720	Advanced Immunology: Critical Thinking	3

#### *Neuroscience*

COMP BIO 505	Veterinary Neuroanatomy and Neurophysiology	3
ZOOLOGY/ PSYCH 523	Neurobiology	3
NTP/ NEURODPT 610	Cellular and Molecular Neuroscience	4
NTP/NEURODPT/ PSYCH 611	Systems Neuroscience	4

#### *Toxicology and Pharmacology*

COMP BIO 555	Veterinary Toxicology	2
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#### *Oncology*

ONCOLOGY 675	Advanced or Special Topics in Cancer Research	1-3
ONCOLOGY 703	Carcinogenesis and Tumor Cell Biology	3

#### *Virology*

PATH-BIO 513	Veterinary Virology	2
BIOCHEM/ M M & I 575	Biology of Viruses	2
ONCOLOGY/ PL PATH 640	General Virology-Multiplication of Viruses	3
M M & I/PATH- BIO 750	Host-Parasite Relationships in Vertebrate Viral Disease	3