

# \*\*\*UPDATED REQUIREMENTS\*\*\*

For students who declared the major Summer 2020 or later -ask Ginny if you have any questions (vjackson4@wisc.edu)

## Molecular and Cell Biology Fall 2022 courses

Level: E=Elementary, I=Intermediate, A=Advanced (L&S Students need at least 60 credits of I/A)

Be sure to check your DARs and pre-requisites!

For questions, schedule an appointment with the MCB Advisor, Ginny Jackson (vjackson4@wisc.edu)

Course Number	Credits	Level	Course Title
<b>Math/Statistics</b>			
Math 221	5	I	Calculus & Analytic Geometry I (Lec/Dis)
Math 222	4	I	Calculus & Analytic Geometry II (Lec/Dis)
Math 234	4	I	Calculus -Functions of Several Variables (Lec/Dis)
Statistics 301	3	I	Introduction to Statistical Methods (Lec/Disc)
Statistics 371	3	I	Introductory Applied Statistics for Life Sciences (Lec/Dis)

<b>General Chemistry</b>			
Chemistry 103	4	E	General Chemistry I (Lec/Lab/Dis)
Chemistry 104	5	E	General Chemistry II (Lec/Lab/Dis)
Chemistry 109	5	E	Advanced General Chemistry (Lec/Lab/Dis)
Chemistry 115	5	I	Chemical Principles I (Lec/Lab/Dis)

<b>Organic Chemistry</b>			
Chemistry 343	3	I	Introductory Organic Chemistry (Lec/Dis)
Chemistry 344	2	I	Introductory Organic Chemistry Lab (Lab/Dis)
Chemistry 345	3	I	Intermediate Organic Chemistry (Lec/Dis)

<b>Physics</b>			
Physics 201	5	I	General Physics (Lec/Lab/Dis)
Physics 202	5	I	General Physics (Lec/Lab/Dis)
Physics 207	5	I	General Physics (Lec/Lab/Dis)
Physics 208	5	I	General Physics (Lec/Lab/Dis)
Physics 247	5	I	A Modern Introduction to Physics (Lec/Lab/Dis)

<b>Introductory Biology</b>			
Biology/Botany/Zoology 151	5	E	Introductory Biology I (Lec/Lab/Dis)
Biology/Botany/Zoology 152	5	E	Introductory Biology II (Lec/Lab/Dis)
Zoology/Biology 101	3	E	Animal Biology (Lec/Dis)
Zoology/Biology 102	2	E	Animal Biology Laboratory (Lab)
Botany/Biology 130	5	E	General Botany (Lec/Lab/Dis)
Biocore* 381	3	I	Evolution, Ecology, and Genetics (Lec/Lab/Dis)
Biocore 382	3	I	Evolution, Ecology, and Genetics Lab (Lab/Dis)
Biocore 485	3	I	Principles of Physiology (Lec/Dis)

\*Biocore is an honors biology, four-semester sequence that has an application process -biocore.wisc.edu

<b>Breadth Coursework</b>			
Biochemistry 501	3	A	Introduction to Biochemistry (Lec)
Biochemistry 507	3-4	A	General Biochemistry I (Lec)
Zoology 570	3	I	Cell Biology (Lec/Dis)
Biocore 381	3	I	Evolution, Ecology and Genetics (Lec/Disc)
Genetics 466	3	I	Principles of Genetics (Lec)

Genetics 467	3	None	General Genetics I (Lec)
<b>Breadth Coursework Continued</b>			
Microbio 470	3	I	Microbial Genetics & Molecular Machines (Lec)

<b>Depth Courses</b>			
<b>Biochemistry and Biophysics</b>			
Biochemistry 601	2	A	Protein and Enzyme Structure and Function (Lec)
Biochemistry 612	3	A	Prokaryotic Molecular Biology (Lec)

<b>Cellular Systems</b>			
Agronomy 340*	3	I	Plant Cell Culture and Genetics Engineering (Lec)
Zoology 523	3	I	Neurobiology (Lec/Dis)
Oncology 401	2	I	Introduction to Experimental Oncology (Lec)
MM&I/ Path Bio 528	3	I	Immunology (Lec)
NTP 610	4	I	Cellular and Molecular Neuroscience (Lec)

\*Agronomy 340 has redesigned the course with no lab -this course will no longer count as a lab course

<b>Genetics</b>			
Genetics 520	3	I	Neurogenetics (Lec)
Genetics 565	3	I	Human Genetics (Lec)
Hort/ Agronomy/ Botany 340	3	I	Plant Cell Culture and Genetic Engineering (Lec)
Genetics/ Biochem/ Micro 612	3	A	Prokaryotic Molecular Biology (Lec)
Genetics 631	2	A	Plant Genetics and Development (Lec)

<b>Microbiology and Virology</b>			
Microbiology 303	3	I	Biology of Microorganisms (Lec)
Microbiology 425	3	I	Environmental Microbiology (Lec)
Microbiology 526	3	A	Physiology of Microorganisms (Lec)
Oncology 640	3	A	General Virology-Multiplication of Viruses (Lec)

<b>Quantitative Biology</b>			
Math/Computer Science 240	3	I	Introduction to Discrete Mathematics (Lec/Disc)
Math 340	3	A	Elementary Matrix and Linear Algebra (Lec/Disc)
Statistics 303	1	I	R For Statistics I (Lec)
Statistics 304	1	I	R For Statistics II (Lec)
Statistics 305	1	I	R For Statistics III (Lec)
Statistics 333	3	A	Applied Regression Analysis (Lec/Disc)
Statistics 421	3	A	Applied Categorical Data Analysis (Lec)
Computer Science 300	3	I	Programming II (Lec)
Computer Science 540	3	A	Introduction to Artificial Intelligence (Lec)
Comp Sci/ BMI 567	3	A	Medical Image Analysis (Lec)
Computer Science 576	3	A	Intro to Bioinformatics (Lec)

<b>Laboratory Course</b>			
Chemistry 327	4	I	Fundamentals of Analytical Science (Lec/Disc/Lab)
Chemistry 329	4	I	Fundamentals of Analytical Science (Lec/Disc/Lab)
Computer Sciences 220*	4	E	Data Science Programming I (Lec/Lab)
Computer Sciences 320*	4	I	Data Science Programming II (Lec/Lab)
Genetics 545	2	A	Genetics Laboratory (Lab)
Microbiology 304	2	I	Biology of Microorganisms Laboratory (Lab)
Radiology /BME /Med Physics 619*	3	I	Microscopy of Life (Lec/Lab)
Zoology 555	3	A	Laboratory in Developmental Biology (Lab)

\* Lab course option for Fall 2022-let Ginny know if you register. May be officially added to the list pending MCB committee approval.

<b>Directed/Independent Study</b>			
<b>Research and Thesis</b>			
Molecular Biology 681	3	A	Senior Honors Thesis I (Ind)
Molecular Biology 682	3	A	Senior Honors Thesis II (Ind)
Molecular Biology 691	3	A	Senior Thesis I (Ind)
Molecular Biology 692	3	A	Senior Thesis II (Ind)
Molecular Biology 699	1-4	A	Directed Studies (Ind)