

**GEORGE MASON UNIVERSITY
COLLEGE OF SCIENCE**

**B.S. DEGREE IN BIOLOGY - CONCENTRATION IN Biotechnology and Molecular Biology
(1200 Exploratory Hall, 703-993-1050)**

<http://biology.gmu.edu/>
2018 - 2019 CATALOG

	<u>Department(s) & Course #(s)</u>	<u>Completed/ Grade(s)</u>	<u>Needed</u>
<u>MASON CORE REQUIREMENTS (27)</u>			
a. Written Communication: ENGH 101 (100), ENGH 302 (C or better) (3,3)		____	____
b. Oral Communication: COMM 100 or 101 (circle choice) (3)		____	____
c. Quantitative Reasoning (satisfied by completion of major requirements)			
d. Literature (3)	_____	____	____
e. Arts (3)	_____	____	____
f. Western Civilization (3)	_____	____	____
g. Social & Behavioral Science (3)	_____	____	____
h. Natural Science (satisfied by completion of major requirements)			
i. Global Understanding (3)	_____	____	____
j. Information Technology (satisfied by completion of major requirements)			
k. Synthesis (3)	_____	____	____

Go to: <http://catalog.gmu.edu/mason-core/> to link to information on Mason Core requirements.

MAJOR REQUIREMENTS

a. Twenty-two credits in biology core courses (22)			
1. BIOL 213 (4) (grade of C or better required to advance to other core requirements)		1. _____	_____
2. BIOL 214 (4) (grade of C or better required)		2. _____	_____
3. BIOL 311 (4) (grade of C or better required)		3. _____	_____
4. BIOL 308 (writing intensive course) (5) (grade of C or better required)		4. _____	_____
5. BIOL 310 (3) and BIOL 330 (2) (grade of C or better required)		5. _____	_____
b. Eleven credits in biotechnology courses (11)			
1. BIOL 305 (3)		1. _____	_____
2. BIOL 306 (1)		2. _____	_____
3. BIOL 385 (3)		3. _____	_____
4. BIOL 483 (4)		4. _____	_____
c. Eleven credits of additional BIOL coursework (at least one the courses must include a laboratory): Laboratory courses: BIOL 402 and 403 (3 & 1), 405 (4), 406 (4), 452 and 453 (3 & 1), 486 (2). Non-laboratory courses: BIOL 314 (4), 382 (3), 411 (3), 417 (1-4)*, 418 (3)*, 420 (3), 421 (3), 422 (3), 482 (3), 484 (3), 497 (1-4)* (circle choices) (11)			
*Registration for BIOL 417, 418, or 497 is subject to approval by Director of Undergraduate Studies and the Chairman of the Department of Biology			
d. Eighteen credits of chemistry (18)			
1. CHEM 211/213, CHEM 212/214 (3,1/3,1)		1. _____	_____
2. CHEM 313, CHEM 315 (3,2)		2. _____	_____
3. CHEM 314, CHEM 318 (3,2)		3. _____	_____
e. PHYS 243/244 and PHYS 245/246 or PHYS 160/161 and PHYS 260/261 (3/1, 3/1)		e. _____	_____
f. One course from (circle choice): MATH 111(3) or MATH 113 (4) or MATH 123 & 124 (3,3)		f. _____	_____
g. CDS 130 (recommended) or any course(s) that fulfills the IT Mason Core requirement (3)		g. _____	_____

NOTES: Students must earn a minimum GPA of 2.0 in their Biology course work and a minimum GPA of 2.0 in supporting course work. No more than eight credits of BIOL 103 or 106/107 may be applied toward elective credit (or equivalent transfer credit at the 100-200 level) if taken before successful completion of BIOL 213. Students may not count BIOL 124 and/or 125 toward any Biology major requirement, Students who take BIOL 310 may not count BIOL 303 and/or 304 toward any Biology major requirement.

GENERAL ELECTIVES: Maximum 2 credits of PHED, PRLS, and RECR coursework toward a COS degree.

Only MLSC 400 and MLSC 402 may be used for credit towards a COS degree. (List courses)

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

MINIMUM 120 HOURS (including Minimum 45 UPPER DIVISION HOURS) to GRADUATE

This planning form is intended to be used in consultation with your academic advisor and reflects the requirements for the 2018-2019 Catalog; the University Catalog is the official reference for program requirements.

B.S. Biology

2018 - 2019

FALL YEAR 1	CREDITS	SPRING YEAR 1	CREDITS	NOTES
BIOL 213	4	BIOL 310	3	*Math Req =
CHEM 211	3	BIOL 330	2	MATH 111, 113 or
CHEM 213	1	MATH Req*	3 or 4	123/124 (two
Mason Core	3	CHEM 212	3	semesters).
Mason Core	3	CHEM 214	1	*BIOL 214 can be
UNIV 100	1	Mason Core	3	taken with 213 in
Total:	15 credits	Total:	15 or 16 credits	first semester.

FALL YEAR 2	CREDITS	SPRING YEAR 2	CREDITS	NOTES
BIOL 214	4	BIOL 311	4	*2 nd math is not
Mason Core or MATH*	3 or 4	Mason Core	3	required, but many professional schools
CHEM 313	3	CHEM 314	3	require 2 semesters of
CHEM 315	2	CHEM 318	2	calculus.
Mason Core	3	Mason Core	3	
Total:	15 or 16 credits	Total:	15 credits	

FALL YEAR 3	CREDITS	SPRING YEAR 3	CREDITS	NOTES
BIOL 305	3	BIOL 483	4	*PHYS requirement
BIOL 306	1	PHYS Lecture*	3	can be fulfilled by the
PHYS Lecture*	3	PHYS Lab	1	following sequences:
PHYS Lab	1	Additional BIOL Req. (non-lab)*	3 or 4	PHYS 160/161 and 260/ 261 OR PHYS 243/244
CDS 130	3	General Elective	3	and 245/246.
Total:	16 credits	Total:	14 or 15 credits	

FALL YEAR 4	CREDITS	SPRING YEAR 4	CREDITS	NOTES
BIOL 308	5	Synthesis	3	*Additional BIOL Req.
BIOL 385	3	General Elective	3	courses are listed
ENGH 302	3	General Elective	3	on page 2.
Additional BIOL Req. (with lab)*	4	Additional BIOL Req.*	3 or 4	
Total:	15 credits	Total:	12 or 13 credits	

*THIS IS A SAMPLE PLAN. BECAUSE THE SEMESTERS WHEN CONCENTRATION REQUIREMENTS ARE OFFERED CAN VARY, IT IS BEST TO MAKE AN INDIVIDUAL DEGREE PLAN WITH A BIOLOGY ADVISOR.

*Students must earn 120 credits for graduation; 45 credits must be upper-level (courses 300+).

Eleven credits of additional BIOL coursework are required for this concentration. At least one of the additional courses must include a laboratory. Laboratory courses: BIOL 402 and 403 (3 and 1), BIOL 405 (4), BIOL 406 (4), BIOL 452 and 453 (3 and 1), BIOL 486 (2). Non-laboratory courses: BIOL 314 (4), BIOL 382 (3), BIOL 411 (3), BIOL 417 (1-4), BIOL 418 (3)*, BIOL 420 (3), BIOL 421 (3), BIOL 422 (3), BIOL 482 (3), BIOL 484 (3), BIOL 497 (1-4)*. ***Registration for BIOL 417, 418, or 497 is subject to approval by the Director of Undergraduate Studies and the Chairman of the Department of Biology.**