

**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/>  
**2017-2018 CATALOG**

	<u>Department(s) &amp; Course #(s)</u>	<u>Completed/ Grade(s)</u>	<u>Needed</u>
<b><u>MASON CORE REQUIREMENTS (27)</u></b>			
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) (may be satisfied by major requirement)	_____	_____	_____

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

**MAJOR REQUIREMENTS (76-77)**

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)			
<b>*Registration for BIOL 417, 418, or 497 is subject to approval by Director of Undergraduate Studies and the Chairman of the Department of Biology</b>			
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 2016-2017 Catalog; the University Catalog is the official reference for program requirements.

# COURSE LISTS (BIOLOGY, BS)

## Mason Core Requirements

**Written Communication:** ENGH 101 (or 100) and ENGH 302

**Oral Communication:** COMM 100 or COMM 101

**Quantitative Reasoning:** MATH 111, 113, 123 and 124, The Math Placement Test is required to take MATH 108, 113, 115, 123, and 125. See this web site for more information: [http://math.gmu.edu/placement\\_test.php](http://math.gmu.edu/placement_test.php)

**Literature:** ARAB 325; CHIN 310, 311, 325, 328; CLAS 250, 260, 340, 350, 360, 380; ENGH 201, 202, 203, 204; FREN 325, 329; FRLN 330; GERM 325; ITAL 320, 325; JAPA 340; KORE 311; PHIL 253; RELI 235, 333; RUSS 325, 326, 327; SPAN 325

**Arts:** ARTH 101, 102, 103, 200, 201, 203, 204, 206, 321, 322, 324, 333, 334, 335, 340, 341, 342, 344, 345, 360, 362, 370, 372, 373, 376; AVT 103, 104, 215, 222, 232, 243, 252, 253, 262, 272, 385; DANC 101, 119, 125, 131, 145, 161, 225, 231, 245, 301, 325, 331, 345, 425, 445, 390, 391; ENGH 370, 371, 372, 396; FAVS 225; GAME 101; MUSI 100, 101, 102, 107, 280, 301, 302, 380, 381, 382, 383, 384, 385, 387, 389, 485; PHIL 156; THR 101, 150, 151, 210, 230, 395, 411, 412.

**Western Civilization:** HIST 100 or 125; transfer students may substitute: the following courses for HIST 100: HIST 101, 102, 301, 302, 304, 305, 306, 308, 309, 312, 314, 322, 388, 436, 480; and the following courses for HIST 125: HIST 202, 387.

**Social and Behavioral Sciences:** AFAM 200; ANTH 114, 120, 135, 363, 372, 396; BUS 100; CONF 101; CONS 410; CRIM 100; ECON 100, 103, 104, 105, 367; EDUC 203, 372; GCH 325; GGS 103; GOVT 101, 103, 367; HEAL 230; HIST 121, 122; LING 306; PSYC 100, 211, 231; SOCI 101, 352, 355; TOUR 311; WMST 200

**Natural Sciences:** BIOL 213, CHEM 211/213, CHEM 212/214

**Global Understanding:** ANTH 302, 306, 307, 308, 309, 312, 313, 316, 331, 332, 382; ARTH 319, 320, 382, 383, 384, 385, 386; BUS 200; CEIE 100; COMM 305, 456; CRIM 405; DANC 118, 318, 418; ECON 360, 361, 362, 380, 390; ENGH 362, 366; FAVS 300; FRLN 331; GCH 205; GGS 101; GLOA 101; GOVT 132, 133; HIST 251, 252, 261, 262, 271, 272, 281, 282, 328, 329, 356, 357, 358, 360, 364, 365, 387, 460, 462; JAPA 310; MBUS 305; MUSI 103, 431; PHIL 243; PROV 105; PSYC 379; RELI 100, 211, 212, 313, 315, 320, 322, 341, 374; RUSS 354; SOCI 120, 320, 332; SPAN 322, 466; SYST 202; THR 359, TOUR 210; WMST 100

**Information Technology: One of these courses:** ANTH 395, CDS 130, CS 100, GOVT 300, HIST 390, IT 104, MIS 303, MUSI 259 **or Course(s) from a) and one course from b):** a) AVT 180; CS 112; PHYS 251; PSYC 300, 301, & 372 (all three must be taken and in sequence); SOCI 410 b) CDS 151, CEIE 409, CS 105, ENGR 107, IT 304, PHIL 112 (**CDS 130 recommended**)

**Synthesis/Capstone:** ANTH 400; ARAB 351, 440; ARTH 394; ASTR 402; ATEP 441; AVT 385, 497, 498; BAS 491; BENG 492, 493; BINF 354; **BIOL 301, 379**; BIS 490; BUS 498; CEIE 490; CHIN 318, 355, 475; COMM 326, 362, 454; CONF 490; CONS 490, 491; CRIM 495; CS 306; CYSE 493; DANC 490; ECE 492, 493; ECON 309; EDCI 490; ENGH 401, 417, 458, 470, 484, 486, 495; EVPP 378, 480; FAVS 352, 496, 497, 499; FRLN 385; GAME 490; GCH 465; GEOL 420; GLOA 400; GGS 303, 304; GOVT 490, 491; HAP 465, 489, 498; HDFS 400; HIST 300, 499; INTS 308; IT 492, 493; KINE 490; LAS 499; MATH 400; ME 444; MUSI 324, 424, 490, 491, 495; NURS 465; PHED 415; PHIL 309, 343, 377, 378, 379, 421, 422; PHYS 346, 407; PRLS 490; PROV 342; PSYC 405, 406, 427; RELI 490; RHBS 499; RUSS 353; SOCI 377, 483, 485; SOCW 375, 472; SPAN 388; SPMT 490; STAT 490; SYST 495; THR 440, 496; TOUR 490