

2011-12 BIOLOGY CURRICULUM CHECKLIST

Classes of 2013 and 2014 & beyond

Completed	Course Number & Title	Credits
<input type="checkbox"/>	BI 200 Molecules & Cells * – fall/spring	3
<input type="checkbox"/>	BI 201 Ecology & Evolution – spring	3
<input type="checkbox"/>	BI 204 Investigations in Molecular Cell Biology Lab – fall/spring <i>NOTE: Typically taken in the sophomore year (after taking BI 200 or AP equivalent)</i>	3
<input type="checkbox"/>	Category A: Genes & Genomes <i>One from the following:</i> <ul style="list-style-type: none">• BI 315 Introduction to Genomics - fall• BI 319 Genetics & Genomics - spring• BI 417 Microbial Genetics - spring	3
<input type="checkbox"/>	Category B: Organismal & Systems Biology <i>One from the following:</i> <ul style="list-style-type: none">• BI 303 Introduction to Physiology – fall/spring• BI 327 Plant Biology – <i>not offered in 2011-12</i>• BI 432 Developmental Biology - fall• BI 433 Human Physiology with Lab - spring• BI 481 Introduction to Neuroscience - fall	3-4
<input type="checkbox"/>	One Advanced Experience Course – indicated with a + sign on Biology Elective List (see reverse). NOTE: Only required for the Class of 2014 and after. Even though this is not a requirement for Classes of 2012/2013, students are encouraged to take one of these courses.	2-4
<input type="checkbox"/>	Additional Biology Electives (numbered 300 and above – see reverse) <ul style="list-style-type: none">• BS Majors – Need to reach a minimum of 30 credits.• BA Majors – Need to reach a minimum of 33 credits (9 credits can be from the BA Elective List)	

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Biology Majors are encouraged to take more electives than the required number for graduation.

***NOTE:** Students who use AP credits in the place of BI 200 should take BI 304 Cell Biology or BI 440 Molecular Biology

BIOLOGY ELECTIVES - Advanced Experience Courses Indicated with + sign

FALL 2011		SPRING 2012	
BI 303	Intro to Physiology (<i>Burdo</i>)	BI 303	Intro to Physiology (<i>DiBenedetto</i>)
BI 304	Cell Biology (<i>Burgess</i>)	BI 304	Cell Biology (<i>Burgess</i>)
BI 315	Intro to Genomics (<i>Cam</i>)	BI 319	Genetics & Genomics (<i>Muskavitch</i>)
BI 407	Ecology of Plants with Lab + (<i>Hitchcock</i>)	BI 401	Environmental Biology (<i>Fertuck</i>)
BI 420	Intro to Bioinformatics (<i>Marth</i>)	BI 414	Microbiology (<i>K. Dunn</i>)
BI 426	Human Anatomy with Lab (<i>DiBenedetto</i>)	BI 417	Microbial Genetics (<i>Meyer</i>)
BI 429	Medical Biochemistry & Metabolism (<i>Wyman</i>)	BI 433	Human Physiology with Lab (<i>Mullikin-Kilpatrick</i>)
BI 432	Developmental Biology (<i>Taghian</i>)	BI 435	Biological Chemistry (<i>Wyman</i>)
BI 435	Biological Chemistry (<i>Kirschner</i>)	BI 440	Molecular Biology (<i>Taghian</i>)
BI 442	Principles of Ecology (<i>Wolff</i>)	BI 445	Animal Behavior (<i>Hitchcock</i>)
BI 457	Principles of Immunology (<i>Coleman</i>)	BI 451	Cancer Biology (<i>Taghian</i>)
BI 481	Intro to Neuroscience (<i>Burdo</i>)	BI 483	Research in Molecular Biology Lab + (<i>Siegfried-Harris</i>)
BI 482	Research in Cell Biology Lab + (<i>Siegfried-Harris</i>)	BI 485	Research in Neuroscience Lab + (<i>Burdo</i>)
BI 484	Research in Biochemistry Lab + (<i>R. Dunn</i>)	BI 487	Research in Molecular Genetics Lab + (<i>Hoffman</i>)
BI 503	Current Topics in Cancer Research + (<i>Seyfried</i>)	BI 503	Current Topics in Cancer Research + (<i>Seyfried</i>)
BI 509	Vertebrate Cell Biology (<i>Mullikin-Kilpatrick</i>)	BI 506	Recombinant DNA Technology (<i>Hoffman</i>)
BI 513	Environmental Disruptors of Development + (<i>Hake</i>)	BI 523	Immunity & Infectious Disease + (<i>Williams</i>)
BI 528	Biotechnology Research Topics + (<i>R. Dunn</i>)	BI 527	Neurobiology of Disease + (<i>Burdo</i>)
BI 533	Virus Infections & Cellular Transport + (<i>Moroianu</i>)	BI 529	Biomolecules: Molecular Driving Forces (<i>Clote</i>)
BI 561	Molecular Evolution (<i>Chuang</i>)	BI 535	Structural Biochemistry of Neurological Diseases (<i>Kirschner</i>)+
CH 561	Biochemistry 1 (<i>Roberts</i>)	BI 536	Viruses, Genes & Evolution (<i>Johnson</i>)
		CH 562	Biochemistry 2 (<i>Weerapana</i>)
		GE 440	Global Biogeochemical Cycles (<i>Papineau</i>)
OTHER BIOLOGY ELECTIVES – not offered in 2011-12, but planned for future semesters.			
BI 327 Plant Biology		BI 551 Cell Biology of the Nervous System	
BI 517 Human Parasitology		BI 570 Biology of the Nucleus	
APPROVED BIOLOGY BA ELECTIVES			
Fall 2011:	PL 593 Philosophy of Science; PS 285 Behavioral Neuroscience; PS 383 Neurobiological Basis of Learning & Memory; TH 598 Law, Medicine & Ethics		
Spring 2012:	PL 541 Philosophy of Health Science: East & West; PL 583 Philosophy of Biology; PS 285 Behavioral Neuroscience; PS 371 Cognitive Neuroscience: Mind & Brain; PS 380 Neuroscience of Psychopathology; PS 381 Neurobiology of Social Behavior; PS 386 Psychopharmacology; PS 575 Advanced Affective Neuroscience		
Biostatistics is not required for the major, but is useful and recommended.			
BI 231	Biostatistics Honors (<i>Clote</i>)	BI 230	Biostatistics (<i>McGowan</i>)

BS MAJOR CO-REQUISITES

Chemistry (15-16 credits):

- General Chemistry 1 & 2 with Labs (CH 109-110; CH 111-112)
- Organic Chemistry 1 with Lab (CH 231-232)
- Organic Chemistry 2 with Lab (CH 233-234) or Biological Chemistry (BI 435) or Biochemistry 1 (CH 561)

Quantitative Requirements (4 course equivalents; 6-18 cr.)

- Calculus 1 (MT 100) or AP or equivalent
- Calculus 2 (MT 101) or AP or Biostatistics (BI 230; BI 231)
- Two** Additional Courses from the following list:
 - PH 211 Physics 1 (calculus-based) with Lab
 - PH 212 Physics 2 (calculus-based) with Lab
 - BI 230 or BI 231 Biostatistics (or another departmentally-approved course in statistics)
 - BI 508 Algorithms in Computational Biology *
 - BI 529 Biomolecules: Molecular Driving Forces * +
 - CS 102 Computer Science 2 **
 - MT 101 Calculus 2
 - MT courses numbered 200 or higher +

NOTES:

Biology Majors in the pre-med program take Physics 1 & 2 with Labs and consider adding a statistics course.

*BI 508 and BI 529 cannot be used to satisfy both a quantitative co-req and a biology elective.

**CS 102 requires a pre-req of Computer Science 1 (CS 101), which is not applied to the biology major.

+ Requires Calculus 2.

BA MAJOR CO-REQUISITES

Chemistry (8 credits):

- General Chemistry 1 & 2 with Labs (CH 109-110; CH 111-112)

Quantitative (credits depend on math background):

- Calculus 1 (MT 100) or AP credit

NOTES FOR BS & BA MAJORS

Calculus Placement & Sequencing Notes

Calculus 1 requirement is satisfied by MT 100 or an AP score of 4 or 5 on the AB exam or a score of 3 on the BC exam.

Calculus 1 & 2 can be satisfied by completing MT 101 or an AP score of 4 or 5 on the BC exam.

Calculus 1 & 2 can be taken concurrently with Physics 1 & 2.

Biology majors typically begin and/or complete calculus courses during freshman year.