

Biology BS Curriculum Checklist

Fall 2025 – Spring 2026 (updated 03/28/2025)

Completed

Required Courses

- ☐ BIOL2000 Molecules & Cells (fall/spring)
- ☐ BIOL2010 Ecology & Evolution (fall/spring)
- ☐ BIOL2040 Investigations in Molecular Cell Biology Lab (fall/spring) **NOTE:** Taken after BIOL2000
- ☐ Category A: Genetics & Genomics
 - One from the following:
 - BIOL3050 Genetics – 4 cr
 - BIOL3060 Foundations in Genetics (summer/fall)
- ☐ Category B: Physiology & Organismal Biology
 - One from the following:
 - BIOL3030 Comparative Vertebrate Physiology
 - BIOL3320 Developmental Biology (spring only)
 - BIOL4110 Ornithology (spring only)
 - BIOL4330 Human Physiology with Lab (spring only) – 4 cr
 - BIOL4450 Behavioral Ecology (not offered in AY25-26)
- ☐ One Advanced Experience Course (see the listing on reverse side)
 - NOTE:** Undergraduate Research can be used to satisfy the Advanced Experience requirement and to contribute three credits toward the major if the student completes two semesters in the same laboratory.
- ☐ Choose Biology courses 3000 level or above to bring the total Biology credits to 30

See the reverse page for a listing of biology electives. For those who wish to focus their studies in a specific area, courses are categorized by concentration (see superscript). Concentrations, while providing more in-depth coverage around a single topic, are not officially recognized on a transcript and are not required for the Biology Major. More information on how selected electives form the basis of a concentration is available on the Biology Department website.

CO-REQUISITES

Chemistry

- ____ General Chemistry 1 & 2 with Labs (CHEM1109-1110; 1111-1112)
- ____ Organic Chemistry 1 with Lab (CHEM2231-2233)
- ____ Organic Chemistry 2 with Lab (CHEM2232-2234) OR Biological Chemistry (BIOL4350)*

Mathematics

- ____ Calculus 1 (MATH1100) or equivalent

Additional Quantitative courses

- ____ Choose three from the following list
 - Research Methods in Organismal Biology (BIOL3140)*
 - Population Genetics (BIOL4250)*
 - Computer Science 1 and/or 2 (CSCI1101, CSCI1102)
 - Database Systems and Applications (CSCI2257)
 - Data Science (CSCI2291)
 - Econometrics (ECON2228)
 - Calculus 2 (MATH1101)
 - Multivariable Calculus (MATH2202)
 - Linear Algebra (MATH2210)
 - Introduction to Abstract Mathematics (MATH2216)
 - Mathematical Foundations of Data Science (MATH2250)
 - Intro to Analysis and/or Analysis (MATH3320, MATH3321)
 - Differential Equations (MATH4410)
 - Intro Physics 1 (calculus-based) with Lab (PHYS2100)
 - Intro Physics 2 (calculus-based) with Lab (PHYS2101)
 - Statistics (BIOL2300, ECON1151, MATH4427, PHCG3560)**

*BIOL3140, BIOL4250 and BIOL4350 can apply as EITHER an elective OR a co-requisite, not both

2025-2026 BIOLOGY ELECTIVES	
Biology Electives are 3 credits each unless otherwise noted.	
Fall 2025 ³ Comparative Vertebrate Physiology (BIOL3030) ² Cell Biology (BIOL3040) ⁴ Genetics (BIOL3050) – 4 cr ⁴ Foundations in Genetics (BIOL3060) ³ Research Methods in Organismal Biology (BIOL3140)* ² Evolution and Development (BIOL4050) ¹ Virology (BIOL4090) ^{2, 3} Inflammation and Disease (BIOL4120) ⁴ Introduction to Bioinformatics (BIOL4200) ³ Human Anatomy with Lab (BIOL4260) – 4 cr ^{1, 2, 3} Biological Chemistry (BIOL4350) ¹ Vaccination and Immunity (BIOL4440) ² Cellular Biochemistry (BIOL4580)	Spring 2026 ³ Comparative Vertebrate Physiology (BIOL3030) ² Cell Biology (BIOL3040) ⁴ Genetics (BIOL3050) – 4 cr ³ Ecology in a Changing Climate (BIOL3200) ² Developmental Biology (BIOL3320) ³ Deep Sea Biology (BIOL4030) ³ Ornithology (BIOL4110) ¹ Microbiology (BIOL4140) ⁴ Population Genetics (BIOL4250)* ^{2, 3} Metabolic Regulation and Human Disease (BIOL4290) ³ Human Physiology with Lab (BIOL4330) – 4 cr ^{1, 2, 3} Biological Chemistry (BIOL4350) ^{2, 4} Molecular Biology (BIOL4400) ² Cancer Biology (BIOL4510) ^{1, 4} Principles of Immunology (BIOL4570)
BIOLOGY ELECTIVES OFFERED IN OTHER DEPARTMENTS	
Fall 2025 Biochemistry I (CHEM4461)	Spring 2026 Biochemistry II (CHEM4462) Synthetic Biology (CHEM5513)
ADVANCED EXPERIENCE COURSES	
Fall 2025 Seminars (3 credits) ² Nobel Winning Res in Medicine or Physio (BIOL5010) — 2 cr ^{2, 3, 4} Topics in Developmental Biology (BIOL5040) — 2 cr ² Glycobiology and Human Disease (BIOL5200) — 2 cr ^{1, 4} Molecular Basis of Infectious Disease (BIOL5210) ^{2, 3} Cancer as a Metabolic Disease (BIOL5420) ⁴ Biology of the Nucleus (BIOL5700)	Spring 2026 Seminars (3 credits) ² Nobel Winning Res in Medicine or Physio (BIOL5010) — 2cr ^{1, 4} Recombinant DNA Technology (BIOL5060) ¹ Microbial Community Ecology (BIOL5071) — 2 cr ¹ Microbiome and Human Disease (BIOL5100) — 2 cr ² Seminar in Cellular Dynamics (BIOL5180) — 2 cr ¹ Immunity and Infectious Disease (BIOL5230) ^{2, 3} Topics in Nutrition and Metabolism (BIO5250) ³ Vertebrate Biomechanics (BIOL5380) ^{2, 3} Cancer as a Metabolic Disease (BIOL5420) ¹ Topics in Microbial Pathogenesis (BIOL5460)
Advanced Labs (3 credits) ⁴ Research in Evolutionary Genomics (BIOL4802) ^{1, 4} Research in Molecular Biology Lab (BIOL4830) ² Advanced Lab in Cell Imaging (BIOL5450)—2 cr	Advanced Labs (3 credits) ^{1, 4} Research in Molecular Biology Lab (BIOL4830) ² Advanced Lab in Cell Imaging (BIOL5450)—2 cr

Undergraduate Research for credit (BIOL4960 or BIOL4963) can be used to satisfy the Advanced Experience requirement or one biology elective only if the student completes **two semesters of research in the same laboratory**, with permission from the Biology Department. Undergraduate research for credit can take place on or off campus, and requires the permission of the supervising faculty member.

NOTES

¹ Microbiology concentration course

² Cell Biology and Development concentration course

³ Physiology and Organismal Biology concentration course

⁴ Genetics and Genomics concentration course

**Statistics is applied to the quantitative requirement and to the Genes and Genomes concentration but is not applied to the Biology elective credits.

Please visit the [website](#) to see a full list of CORE courses offered Fall 2025