# Biological Sciences: Ecology and Evolution ECEV (0404B)

A minimum of 120 credits earned, and a 2.0 cumulative GPA is needed to meet University graduation requirements. Major courses (Basic, Supporting, and Advanced) require a C- or better in each and a 2.0 average GPA.

### Basic Program: 14-16 credits

| Credits | Basic Program Courses |
|---|---|
| 3 | BSCI160 Ecology and Evolution [1] |
| 3 | BSCI170 Molecular and Cellular Biology [1] |
| 1-2 | BSCI180 Principles of Biology Lab [1] **OR** BSCI161 **AND** BSCI171 [1] |
| 3 | BSCI207 Organismal Biology [2] |
| 4 | BSCI222 Principles of Genetics [2, 3] |
| 1-2 | CMNS100 [4] **OR** UNIV100 **OR** HLSC100 **OR** HACS100 **OR** HDCC105 **OR** HHUM105 |

### Supporting Courses: 32 credits

| Credits | Supporting Courses |
|---|---|
| 3 | CHEM131 General Chemistry I Lecture [1] |
| 1 | CHEM132 General Chemistry I Lab [1] |
| 3 | CHEM231 Organic Chemistry I Lecture [1] |
| 1 | CHEM232 Organic Chemistry I Lab [1] |
| 3 | CHEM241 Organic Chemistry II Lecture [2] |
| 1 | CHEM242 Organic Chemistry II Lab [2] |
| 2 | CHEM271 General Chemistry II Lecture [2] |
| 2 | CHEM272 General Chemistry II Lab [2] |
| 8 | MATH135 Discrete Mathematics [1] (4) **AND** MATH136 **OR** MATH140 Calculus [2] (4) |
| | **OR** MATH140 Calculus I [1] (4) **AND** MATH141 Calculus II [2] (4) |
| 4 | PHYS131 Physics I |
| 4 | PHYS132 Physics II |

### General Education Requirements: 40 credits minimum

For more information on General Education visit gened.umd.edu. Courses may double or triple count among DS, SC, and DV.

| Fundamental Studies (FS) | Course |
|---|---|
| Math (MA) | MATH135 **OR** 140 |
| Analytic Reasoning (AR) | MATH135 **OR** 140 |
| Natural Sciences (NS) | BSCI160 **OR** 170 |
| Natural Sciences Lab (NL) | BSCI180 w/ BSCI160 **OR** 170 |
| Academic Writing (AW) | |
| Professional Writing (PW) | |
| Oral Communication (OC) | |

| Distributive Studies (DS) | Course |
|---|---|
| History and Social Sciences (HS) | |
| History and Social Sciences (HS) | |
| Humanities (HU) | |
| Humanities (HU) | |
| Scholarship in Practice (SP) [5] | |
| Scholarship in Practice (SP) out of major | |

| Signature Courses (SC) | Course |
|---|---|
| Big Question (IS) [5] | |
| Big Question (IS) | |

| Diversity (DV) | Course |
|---|---|
| Understanding Plural Societies (UP) | |
| DVUP **OR** Cultural Competence (CC) | |

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### Ecology and Evolution (ECEV) Advanced Program: 27 credits minimum

A minimum of 27 credits including at least:

- Ten credits of required courses
- 14 credits of area courses, including:
  - Two courses designated as **Lab**
  - Two 400-level courses
- Three credits of enrichment

Please see page two for a list of specific courses and other details.

NOTE: The curriculum in Biological Sciences changes as our faculty improve the program. Any questions can be referred to your academic advisor or the Undergraduate Academic Programs Office by emailing BSCIque@umd.edu or calling 301-405-68

[1] Part of Benchmark One, see bsci.umd.edu/benchmarks
[2] Part of Benchmark Two, see bsci.umd.edu/benchmarks
[3] Students in ILS Honors should take HLSC322 instead of BSCI222.
[4] All BSCI majors must take CMNS100 or another approved freshman seminar during their first semester.
[5] Some BSCI courses have been approved to fulfill this Gen Ed requirement. See page 2 for details.

# Ecology and Evolution (0404B) Advanced Program

27 credits, including two courses designated as **Lab**[6].

## Required courses: 10 credits

| Credits | Required Courses |
|---|---|
| 4 | BSC361 Principles of Ecology |
| 3 | BSCI370 Principles of Evolution |

| Credits | Statistics Course, choose one |
|---|---|
| 3 | BIOM301 Introduction to Biometrics **OR** |
| 3 | STAT400 Applied Probability & Statistics **OR** |
| 3 | STAT464 Introduction to Biostatistics |

## Area courses: 14 credits

Including at least two courses designated as a **Lab** and two 400-level courses

### 300 Level Area Courses

| Credits | 300 Level Area Courses |
|---|---|
| 3 | BSCI331 Cell Biology & Physiology |
| 1 | BSCI332 Cell Biology & Physiology **Lab** [7] |
| 4 | BSCI333 Principles of Paleontology w/**Lab** |
| 3 | BSCI334 Mammalogy |
| 1 | BSCI335 Mammalogy **Lab** [7] |
| 4 | BSCI337 Biology of Insects w/**Lab** |
| 3 | BSCI360 Animal Behavior |
| 3 | BSCI363 Biology Conservation & Extinct. |
| 3 | BSCI366 Environmental Physiology of Animals |
| 4 | BSCI374 Mathematical Biology w/**Lab** |
| 3 | BSCI392 Biology of Extinct Animals |
| 1 | BSCI393 Biology of Extinct Animals **Lab** [7] |

### Additional Area Courses (Optional)

| Credits | Additional ECEV Area courses |
|---|---|
| Var | BSCI328, 338, 339, 348, 439 Spec. Top. Courses [8] |
| 1 | BSCI378H, BSCI398H Dept Honors Seminars [9] |

### 400 Level Area Courses

| Credits | 400 Level Area Courses |
|---|---|
| 3 | BSCI400 Animal Diversity and Evolution |
| 3 | BSCI401 Animal Communication |
| 3 | BSCI403 Biology of Vision |
| 3 | BSCI405 Pop. and Evol. Genetics w/**Lab** |
| 3 | BSCI410 Molecular Genetics |
| 3 | BSCI426 Global Change Biology |
| 3 | BSCI430 Developmental Biology |
| 3 | BSCI431 Origin & Evol. of Nervous Systems |
| 4 | BSCI435 Quant. and Comp. Biology w/ **Lab** |
| 3 | BSCI462 Population Ecology |
| 3 | BSCI464 Microbial Ecology |
| 4 | BSCI467 Freshwater Biology w/**Lab** |
| 3 | BSCI471 Molecular Evolution |
| 3 | BSCI473 Marine Ecology |
| 3 | BSCI476 Evolutionary Genomics |
| 3 | BSCI477 Ecol. & Evol. of Infectious Disease |
| 4 | BSCI481 Insect Diversity & Classification w/**Lab** |
| 3 | BSCI483 Insects, Pathogens, & Public Health |
| 1 | BSCI484 Insects, Pathogens, & Pub. Hlth Lab [7, 10] |
| 4 | BSCI487 IPM: Science-Based Decision Making for Sustainable Pest Mgmt w/**Lab** |
| 3 | BSCI494 Animal-Plant Interactions |
| 4 | BSCI497 Insect Pests of Ornamentals and Turf w/**Lab** |

## Enrichment: 3 credits

- **Three credits from *any* 300- or 400-level BSCI, CHEM, or BCHM course.** Area courses may be used to fulfill Enrichment if they are not used to satisfy the area credit requirement. Courses counted as Enrichment do not satisfy the **Lab** requirement.
- Three credits[9] of BSCI349 (Research Internship), BSCI359 (Teaching Practicum), or BSCI379, 389, or 399 (Departmental Research)[11] credit may be used. Independent study or research courses from other departments may be used with the permission of the department.

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[6] Multiple semesters in BSCI379, 389, or 399 research credits may fulfill one of the two required **Labs**. See ter.ps/reslabcredit for details.
[7] Requires a C- or better in the prerequisite or corequisite lecture to count as a **Lab** or to satisfy the Area category.
[8] Special Topics courses allowed if specifically approved for Advanced Program in ECEV. See your advisor or Testudo for applicability.
[9] The maximum number of credits in these repeatable courses that may count towards the advanced program.
[10] BSCI484 may act as an area Lab but may not fulfill one of the two 400-level courses required for ECEV.
[11] A maximum of eight credits may count towards one or more undergraduate degrees, any additional research credits will be included in the total earned credits and factored into the GPA but **not** applied to any undergraduate degree.