

Zoology (BS) (17ZOOBS)

Freshman Year

| Fall Semester | Credit | Spring Semester | Credit |
|--|--------|---|--------|
| LSC 101 Critical Creative Thinking Life Sci ^{*,1} | 2 | BIO 183 Intro Bio: Cellular & Molecular | 4 |
| BIO 181 Intro Bio: Ecol, Evol, Biodiversity | 4 | CH 221 Organic Chemistry I | 3 |
| CH 101 Chemistry-A Molecular Science | 3 | CH 222 Organic Chemistry I Lab | 1 |
| CH 102 General Chemistry Lab | 1 | ENG 101 Academic Writing & Research* | 4 |
| MA 131 ¹ Calculus Life & Mgmt Sci. A | 3 | MA 231 ¹ Calculus Life & Mgmt Sci. B | 3 |
| LSC 103 Exploring Opportunities Life Sci* | 1 | | |
| GEP Health and Exercise Studies Req* | 1 | | |
| | 15 | | 15 |

Sophomore Year

| Fall Semester | Credit | Spring Semester | Credit |
|--|--------|--------------------------------------|--------|
| BIO 250 Animal Anatomy & Physiology | 4 | Ecology Requirement ⁸ | 4 |
| CH 223 Organic Chemistry II | 3 | GN 311 Principles of Genetics | 4 |
| CH 224 Organic Chemistry II Lab | 1 | CH 201 Chemistry-A Quantitative Sci. | 3 |
| ST 311 Introduction to Statistics OR ST 371 Intro to Probability & Distrib Theory | 3 | CH 202 Quantitative Chemistry Lab | 1 |
| GEP Humanities Req.* | 3 | GEP Interdisc. Persp. Req* | 3 |
| GEP Health and Exercise Studies Req* | 1 | | |
| | 15 | | 15 |

Junior Year

| Fall Semester | Credit | Spring Semester | Credit |
|---------------------------------------|---------------|--|---------------|
| Animal Phylogeny Reqt. ² | 4 | Advanced Writing Reqt. ⁵ | 3 |
| Free Elective ³ | 3 | Zoology Elective ⁶ | 3 |
| PY 211 ⁴ College Physics I | 4 | PY 212 ⁴ College Physics II | 4 |
| GEP Social Sciences Reqt.* | 3 | GEP Social Sciences Reqt.* | 3 |
| | | Free Elective ³ | 3 |
| | 14 | | 16 |

Senior Year

| Fall Semester | Credit | Spring Semester | Credit |
|----------------------------------|---------------|----------------------------------|---------------|
| Zoology Elective ⁶ | 3 | Zoology Elective ⁶ | 3 |
| Zoology Elective ⁶ | 3 | Sci & Math Elective ⁷ | 3 |
| Sci & Math Elective ⁷ | 3 | Free Elective ³ | 3 |
| Sci & Math Elective ⁷ | 3 | GEP Additional Breadth Reqt.* | 3 |
| GEP Humanities Requirement* | 3 | Free Elective ³ | 3 |
| | 15 | | 15 |

Minimum Credit Hours Required for Graduation:

120[†]

SZO 097 Footnotes

†A grade of C- or better is required in the following courses:

LSC 101 Critical Creative Thinking in the Life Sciences

BIO 183 Introductory Biology: Cellular & Molecular Biology

BIO 250 Animal Anatomy & Physiology

Ecology Requirement⁸

Animal Phylogeny Requirement 2

Zoology Electives⁶

GN 311 Principles of Genetics

CH 101/102 Chemistry – A Molecular Science & Lab

CH 221/222 Organic Chemistry I & Lab

CH 223/224 Organic Chemistry II & Lab

CH 201/202 Chemistry – A Quantitative Science & Lab

ENG 101 Academic Writing & Research

Advanced Writing Requirement 5

MA 131 Calculus for Life and Management Sciences A

MA 231 Calculus for Life and Management Sciences B

PY 211 College Physics I

PY 212 College Physics II

ST 311 Intro to Statistics or ST 371 Intro to Probability & Distrib. Theory. Taking courses for credit only (S/U): only PE, Free Electives and courses offered only for S/U credit can be applied to graduation requirements. Students should check with their adviser before electing to take any course that normally is graded A-F as an S/U course.

¹ *Mathematics Alternatives*

MA 141 and MA 241 is a suitable substitute for MA 131 and MA 231.

² *Animal Phylogeny Requirement (take one of the following options)*

BIO 350 Animal Phylogeny and Diversity

(credit for BIO 350 and BIO 140 or ZO 150 or BIO 402/403 not allowed)

BIO 402 –and- BIO 403 Invertebrate Zoology and Invertebrate Zoology Lab (credit for BIO 402/403 and BIO 140 or ZO 150 or BIO 350 not allowed)

³ *Free Electives (take 12 credit hours)*

These electives cannot be remedial nor can they be taken at an elementary level after you have taken comparable coursework at a more advanced level. Students interested in graduate school or professional school should check the courses required for admission to the programs to which they plan to apply.

⁴ *Physics Alternatives*

PY 205 and PY 208 can be substituted for PY 211 and PY 212. PY 205 and PY 208 are calculus-based and require that you take the 40 series of Mathematics¹ (MA 141 and MA 241). PY 201 and PY 202 would also be a suitable substitute for PY 211 and PY 212. PY 201 and PY 202 are calculus-based, require the 40 series of Mathematics¹, and are restricted to students in PAMS.

⁵ *Advanced Writing Requirement (take one course)*

Cannot be double-counted as a GEP requirement.

COM 211 Argumentation and Advocacy

ENG 201 Writing Literary Analysis

ENG 214 Introduction to Editing

ENG 232 Literature and Medicine

ENG 233 The Literature of Agriculture

ENG 287 Explorations in Creative Writing

ENG 288 Fiction Writing
ENG 289 Poetry Writing
ENG 292 Writing About Film
ENG 316 Principles of News and Article Writing
ENG 323 Writing in the Rhetorical Tradition
ENG 331 Communication for Engineering and Technology (Junior standing)
ENG 332 Communication for Business and Management (Junior standing)
ENG 333 Communication for Science and Research (Junior standing)
ENG 381 Creative Nonfiction Writing Workshop (ENG 215, 287, 288, or 289 required)
ENG 388 Intermediate Fiction Writing Workshop (a "B" or better in ENG 288 required)
ENG 389 Intermediate Poetry Writing Workshop (a "B" or better in ENG 289 required)
ENG 416 Advanced News and Article Writing (ENG 215 required)
ENG 417 Editorial and Opinion Writing (ENG 214 and 215 required)
ENG 422 Writing Theory and the Writing Process
ENG 425 Analysis of Scientific and Technical Writing (ENG 314, 331, 332 or 333 required)
ENG 426 Analyzing Style

⁶ *Zoology Electives (take 12 credit hours)*

Select from the following list. Students can use up to 3 hours of ZO 492, ZO 493, BIO 492, BIO 493, or BIO 499 toward Zoology Electives

BIO 315 General Parasitology
BIO 317 Primate Ecology & Evolution
BIO/PB 330 Evolutionary Biology
BIO/PB 330 Evolutionary Biology
BIO 333 Captive Animal Biology
BIO 361 Developmental Biology
BIO 370 Developmental Anatomy of the Vertebrates
BIO 375 Developmental Anatomy Laboratory
BIO 410 Intro to Animal Behavior
BIO 419 Limnology
BIO 422 Biological Clocks
AEC 441 Biology of Fishes
AEC 442 Biology of Fishes Lab.
BIO 444 The Biology of Love and Sex
BIO 460 Field Ecology and Methods
BIO 486 Capstone Course in Biology
BIO 561 Conservation Biology
ENT/FOR 402 Forest Entomology
ENT/BIO 425 General Entomology
ENT/ZO 509 Ecology of Stream Invertebrates
ENT/ZO 582 Medical and Veterinary Entomology
FW 444 or ZO 544 Mammalogy
MEA/BIO 220 Marine Biology
MEA/BIO 449 Biological Oceanography
MB 435 Bacterial Pathogenesis
MB 470 Emerging and Re-emerging Infectious Diseases
PO/ZO/PHY 524 Comparative Endocrinology

AEC 501 Ornithology
ZO 512 Animal Symbiosis
ZO 513 Comparative Physiology
AEC 515 Fish Physiology
AEC 519 Limnology
ZO 522 Biological Clocks
ZO 542 Herpetology
ZO 555 Protozoology
ZO 581 Helminthology

⁷ *Additional Science and Math Electives (take 9 credit hours)*

Courses may be selected from the Sci & Math Electives list. Students interested in graduate school or professional school should check the courses required for admission to the programs to which they plan to apply. Students can use up to 3 hours of BIO 269, ZO 492, ZO 493, BIO 240, BIO 245, BIO 444, BIO 456, BIO 492, BIO 493, BIO 498/499 (must complete both), GPH/ST 404, BIO 416, or BIO 418 toward this requirement.

⁸ *Ecology Requirement*

Ecology is offered as AEC 360 and as PB 360. Formerly, it was offered as BIO 360. Any of these three can be used to meet this requirement.

***General Education Program (GEP) requirements and GEP Footnotes**

To complete the requirements for graduation and the General Education Program, the following category credit hours and co-requisites must be satisfied. University approved GEP course lists for each of the following categories can be found at <https://oucc.dasa.ncsu.edu/general-education-program/>.

A. Introduction to Writing: ENG 101 (4 credit hours with a C- or better) *Must be taken during the first year.*

B. Mathematical Sciences (6 credit hours; one course with MA or ST prefix)

In Zoology, this GEP requirement is met through the Major course requirements.

C. Natural Sciences (7 credit hours; include one laboratory course or course with a lab)

In Zoology, this GEP requirement is met through the Major course requirements.

D. Humanities (6 credit hours selected from two different disciplines/course prefixes)

Choose from the University approved GEP Humanities course list. Some courses on this list will also meet the U.S. Diversity or Global Knowledge co-requisites.

E. Social Sciences (6 credit hours selected from two different disciplines/course prefixes)

Choose from the University approved GEP Social Sciences course list. Some courses on this list will also meet the U.S. Diversity or Global Knowledge co-requisites.

F. Health & Exercise Studies (2 credit hours; at least one 100-level Fitness and Wellness Course)

Choose from the University approved GEP Physical Education/Healthy Living course list.

G. Additional Breadth (3 credit hours)

Choose from the University approved GEP Humanities course list or the GEP Social Sciences course list or the GEP Visual & Performing Arts course list. Some courses on this list will also meet the U.S. Diversity or Global Knowledge co-requisites.

H. Interdisciplinary Perspectives (5 credit hours)

In Zoology, 2 credit hours of this GEP requirement is met through Major course requirements. For the remaining 3 credit hours, choose from the University approved GEP Interdisciplinary Perspectives course list. Some courses on this list will also meet the U.S. Diversity or Global Knowledge co-requisites.

The following **Co-Requisites** must be satisfied to complete the General Education Program requirements

I. U.S. Diversity (USD)

Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite.

J. Global Knowledge (GK)

Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite.

K. Foreign Language proficiency Proficiency at the FL_102 level is required for graduation.