

Welcome to the NEW Graduate Biology Curriculum!

The faculty of the NU Department of Biology has used the opportunity of semester conversion to examine every course and the curriculum as a whole. We have planned exciting changes that we think will improve the flow of our courses and better meet graduate student needs.

This brief guide describes the new curriculum and provide rules for the transition– you will see that much remains the same and that the changes maintain your freedom to choose your own direction in biology.

- (1) Ph.D. students entering with a bachelor's degree, as well as M.S. students, are required to complete thirty semester hours of graduate course work. For Ph.D. students entering with an M.S. degree, the only specific course requirements are described in (3) and (4) below.
- (2) Of the thirty semester hours of required graduate work, twenty must be Biology Department courses, with an option to petition substitution of courses from other departments.
- (3) Two 2-hour seminars are required for students entering the program after the semester curriculum has been implemented: 1) Advanced Topics in Integrative Biology, Advanced Topics in Biochemistry, Cell and Molecular Biology or Research Problem Solving and 2) Ethics in Biological Research.
- (4) The 2-hour seminar Supervised Experience in College Teaching is required for all first-time teaching assistants who enter the program after the semester curriculum has been implemented.

Since the changes to the curriculum retain the freedom to design individually-tailored programs and since we are honoring the course requirements that were in place when the present students entered the program, it is relatively easy to “transition” to semester courses.

- (1) 0.75 (40-Earned QH) = SH needed to graduate
- (2) 0.75 (20-Earned QH) = SH of Biology Department courses needed to graduate
- (3) 0.75 (10-Earned QH) = SH of Biology Department or other approved courses needed to graduate. 4 qh of these courses can be Ph.D. or M.S. research.
- (4) 0.75 (6-Earned QH) = SH of Ph.D. or M.S. research needed to graduate
- (5) Students who have taken 3 or more 3690/3790, with at least two of them 3690 will have fulfilled their seminar requirement.
- (6) Students who have taken 1 or 2 3690/3790 will be required to take Research Problem Solving, Advanced Topics in Integrative Biology, Advanced Topics in Biochemistry, Cell and Molecular Biology or Ethics in Biological Research (each 2-sh).
- (7) Students who have taken no 3690/3790 will be required to take two of the 2-sh courses: Research Problem Solving, Advanced Topics in Integrative Biology, Advanced Topics in Biochemistry, Cell and Molecular Biology or Ethics in Biological Research.

The following is a listing of departmental semester course offerings. Please refer to the *Graduate School of Arts and Sciences Course Descriptions* for course descriptions and relevant prerequisites.

Course Name	Credit (sh)
Graduate Biochemistry	4
Graduate Molecular Cell Biology	4
Structural Biology	4
Genome Structure and Function	4
Biochemistry Methods Laboratory	5
Immunology	4
Advanced Immunology	2
Bioinformatics Methods and Algorithms	5
Advanced Topics in Biochemistry, Cell & Molecular Biology	2
Biological Imaging	4
Biological Electron Microscopy	4
Microbial Physiology and Genetics	4
Microbial Ecology (+lab)	5
Medical Microbiology (+lab)	5
Microbial Biotechnology	4
Parasitology (+lab)	5
Developmental Biology (+lab)	5
Biological Clocks	4
Comparative Neurobiology	4
Neuroethology (+lab)	5
Sociobiology	4
Principles of Animal Physiology (+lab)	5
Biology of Muscle: Molecules to Movements	4
Plant Development	5
Morphology and Evolution of Vascular Plants (+lab)	5
Entomology (+lab)	5
Herpetology (+lab)	5
Ornithology (+lab)	5
Mammalogy (+lab)	5
Wildlife Biology (+lab)	5
Evolution	5
Advanced Topics in Integrative Biology	2
Marine Botany (+lab)	5
Marine Invertebrate Zoology (+lab)	5
The Biology of Corals and Coral Reefs	3
Biology and Ecology of Fishes	3
Marine Birds and Mammals (+lab)	3
Adaptations of Aquatic Organisms	3
Tropical Terrestrial Ecology	1
Benthic Marine Ecology	3
Oceanography (+lab)	3
Ocean and Coastal Processes	3
Experimental Design in Marine Ecology (+lab)	5
Molecular Marine Biology	3
Marine Microbial Ecology (+lab)	3
Diving Research Methods	2
Supervised Experience in College Teaching	2
Ethics in Biological Research	2
Research Problem Solving	2
Bioinformatics Seminar	2
Biology Laboratory Rotation 1	4
Biology Laboratory Rotation 2	4
Directed Readings in Biology	1-4