LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF BIOLOGICAL SCIENCES

CURRICULUM CHANGE

Name of Program and Degree Award: Biology BS
Hegis Number: 0401.00
Program Code: 34022 – BIO-BS
Effective Term: Spring 2027

1. **Type of Change:** Change in degree requirements

2. **From**: ~~Strikethrough~~ the changes

~~Bioenvironmental Sciences Track~~

Major Requirements – Core Courses
Type: Completion requirement

Prerequisites

Earn at least 29 credits from the following:

BIO 166 - Principles of Biology: Cells and Genes
BIO 167 - Principles of Biology: Organisms
CHE 166 - General Chemistry I
CHE 167 - General Chemistry Laboratory I
CHE 168 - General Chemistry 2
CHE 169 - General Chemistry Laboratory II
PHY 166 - General Physics I
PHY 167 - General Physics II

*BIO 166 and BIO 167 can be used to fulfill general education requirements. Both are prerequisites to all other biology courses.

Students can complete MAT 172, 4 credits or the combined substitute (MAT 171 (4) and MAT 108) (2)

** BIO 240 has MAT 175 and MAT 155 as prerequisites. MAT 328 has MAT 128 as a prerequisite.

Students who complete BIO 181 and BIO 182 can use those courses in place of BIO 228.

Students who complete any or all of the pre-requisite courses before declaring the major may complete the major in less than 77 credits.

A grade of C or higher is recommended for all courses in the prerequisite list.

Complete at least 1 of the following:

Complete ALL of the following Courses:

MAT 172 - Precalculus

OR

Complete ALL of the following Courses:

MAT 171 - Elements of Precalculus
MAT 108 - Trigonometry

Foundation**

Complete ALL of the following Courses:

BIO 238 - Genetics
BIO 239 - Genetics Laboratory
BIO 240 - Biostatistics.

OR MAT 328 - Techniques in Data Science

** BIO 240 has MAT 175 and MAT 155 as prerequisites. MAT 328 has MAT 128 as a prerequisite.

Organic Chemistry

Complete ALL of the following Courses:

CHE 232 - Organic Chemistry Lecture I
CHE 233 - Organic Chemistry Laboratory I
CHE 234 - Organic Chemistry Lecture II
CHE 235 - Organic Chemistry Laboratory II

Additional Comments:

At least 21-22 credits in one of the following tracks:

Major Requirements – Biomedical Sciences Track

Type: Completion requirement

Biomedical Sciences at least 21 credits

Select courses from lists: A, B, and C

List A

Earn at least 12 credits from the following:

BIO 228 - Mammalian Physiology
BIO 267 - Comparative Anatomy of Vertebrates
BIO 303 - Data Mining and Bioinformatics
BIO 331 - Experimental Microbiology
BIO 333 - Endocrine Physiology
BIO 350 - Introduction to Immunology
BIO 351 - Immunology Laboratory
BIO 400 - Biological Chemistry
BIO 410 - Cell Physiology and Biochemistry
BIO 411 - Principles of Virology
BIO 415 - Medical Microbiology
BIO 420 - Molecular Biology
BIO 431 - Comparative Animal Physiology

List B

Earn at least 8 credits from the following:

BIO 229 - Astrobiology: Life and Health Beyond Earth
BIO 241 - Evolution, Species, and Biogeography
BIO 242 - Urban Agriculture: Gardening for Change
BIO 268 - Vertebrate Embryology
BIO 311 - Parasitology
BIO 312 - Parasitology Laboratory
BIO 317 - Drugs, Brain and Behavior
BIO 320 - Neural Development: From Genes and Cells to Brains
BIO 321 - Neural Development Laboratory
BIO 330 - Plant Physiology
BIO 336 - Marine Biology Lectures
BIO 338 - Human Genetics
BIO 339 - Ecology
BIO 340 - Human Body and Brain
BIO 341 - Human Body and Brain Laboratory
BIO 403 - Medicinal Plants
BIO 406 - Cancer and Cellular Differentiation
BIO 425 - Ichthyology
BIO 426 - Ichthyology Laboratory
BIO 435 - Neurophysiology
BIO 438 - Genomics and Human Health
BIO 465 - Microbial Physiology and Genetics

List C

Earn at least 1 credits from the following:

BIO 440 - Biology Journal Review
BIO 450 - Biology Seminar
BIO 471 - Research In Molecular Microbio
BIO 489 - Introduction to Experimental Biology
BIO 490 - Honors in Biological Sciences

BIO 489 may be repeated for a maximum 3 credits

Type: Completion requirement

Maor Requirements-Organismic Sciences Track

Type: Completion requirement

Organismic Sciences at least 21 credits

Select courses from lists A, B, and C

List A

Earn at least 12 credits from the following:
BIO 229 - Astrobiology: Life and Health Beyond Earth
BIO 241 - Evolution, Species, and Biogeography
BIO 242 - Urban Agriculture: Gardening for Change
BIO 268 - Vertebrate Embryology
BIO 317 - Drugs, Brain and Behavior
BIO 311 - Parasitology
BIO 312 - Parasitology Laboratory
BIO 320 - Neural Development: From Genes and Cells to Brains
BIO 321 - Neural Development Laboratory
BIO 330 - Plant Physiology
BIO 336 - Marine Biology Lectures
BIO 338 - Human Genetics
BIO 339 - Ecology
BIO 340 - Human Body and Brain
BIO 341 - Human Body and Brain Laboratory
BIO 403 - Medicinal Plants
BIO 406 - Cancer and Cellular Differentiation
BIO 425 - Ichthyology
BIO 426 - Ichthyology Laboratory
BIO 435 - Neurophysiology
BIO 438 - Genomics and Human Health
BIO 465 - Microbial Physiology and Genetics

List B

Earn at least 8 credits from the following:

BIO 228 - Mammalian Physiology
BIO 267 - Comparative Anatomy of Vertebrates
BIO 303 - Data Mining and Bioinformatics
BIO 331 - Experimental Microbiology
BIO 333 - Endocrine Physiology
BIO 350 - Introduction to Immunology
BIO 351 - Immunology Laboratory
BIO 400 - Biological Chemistry
BIO 410 - Cell Physiology and Biochemistry
BIO 411 - Principles of Virology
BIO 415 - Medical Microbiology
BIO 420 - Molecular Biology
BIO 431 - Comparative Animal Physiology

List C

Earn at least 1 credits from the following:

BIO 440 - Biology Journal Review
BIO 450 - Biology Seminar
BIO 471 - Research In Molecular Microbio
BIO 489 - Introduction to Experimental Biology
BIO 490 - Honors in Biological Sciences

BIO 489 may be repeated for a maximum 3 credits

Major Requirements – Brain Sciences Track

Type: Completion requirement

Brain Sciences At Least 21 Credits

Select courses from lists: A, B, and C

List A

Earn at least 14 credits from the following:

BIO 228 - Mammalian Physiology
BIO 317 - Drugs, Brain and Behavior
BIO 320 - Neural Development: From Genes and Cells to Brains
BIO 321 - Neural Development Laboratory
BIO 340 - Human Body and Brain

BIO 341 - Human Body and Brain Laboratory
BIO 400 - Biological Chemistry
BIO 420 - Molecular Biology
BIO 435 - Neurophysiology

List B

Earn at least 1 credits from the following:

BIO 440 - Biology Journal Review
BIO 450 - Biology Seminar
BIO 471 - Research In Molecular Microbio
BIO 489 - Introduction to Experimental Biology
BIO 490 - Honors in Biological Sciences
BIO 489 may be repeated for a maximum 3 credits

List C

Earn at least 6 credits from the following:

PSY 166 - General Psychology
PSY 308 - Motivation and Emotion
PSY 310 - Psychology of Learning
PSY 312 - Psychology of Memory
PSY 314 - Cognitive Psychology
PSY 317 - Psychology of Sensation and Perception
PSY 366 - Clinical Neuropsychology

PSY 166 can be used to fulfill General Education requirements and is a prerequisite to all other PSY courses. Students who complete PSY 166 before declaring the major only need to complete 6 credits in this area.

Major Requirements – Bio-Data Sciences Track

Type: Completion requirement

Bio-Data Sciences At Least 22 Credits

Select courses from lists: A, B, and C

List A

Earn at least 12 credits from the following:

BIO 241 - Evolution, Species, and Biogeography
BIO 242 - Urban Agriculture: Gardening for Change
BIO 270 - Invertebrate Zoology
BIO 271 - Invertebrate Zoology Laboratory

BIO 303 - Data Mining and Bioinformatics
BIO 330 - Plant Physiology
BIO 331 - Experimental Microbiology
BIO 336 - Marine Biology Lectures
BIO 339 - Ecology
BIO 400 - Biological Chemistry
BIO 403 - Medicinal Plants
BIO 420 - Molecular Biology
BIO 425 - Ichthyology
BIO 426 - Ichthyology Laboratory
BIO 503 - Topics in Urban Ecology

List B

Earn at least 1 credits from the following:

BIO 440 - Biology Journal Review
BIO 450 - Biology Seminar
BIO 471 - Research In Molecular Microbio
BIO 489 - Introduction to Experimental Biology
BIO 490 - Honors in Biological Sciences

BIO 489 may be repeated for a maximum 3 credits

List C

Fulfill ALL of the following requirements:

9 Credits in Geospatial, Environmental and Data Science From List C:

Earn at least 3 credits from the following:

GEP 205 - Principles of Geographic Information Science
GEP 3060 - Raster Applications
GEP 375 - Data Acquisition and Integration Methods for GIS Analysis
GEO 340 - Natural Hazards and Disasters: A Multidisciplinary Approach
ENV 235 - Conservation of the Environment

AND

Earn at least 6 credits from the following:

GEH 245 - Introduction to Quantitative Methods of Geography
SOC 348 - Reasoning with Data
DAT 310 - Data Visualization

Additional Comments:

Students that take MAT 128, MAT 328 to satisfy the math requirement and take GEH 245, SOC 348, and DAT 310 to satisfy List C for the Bio-Data Sciences track would earn a minor in Data Science.

3. **To**: Underline the changes

Bio-Data Sciences Track

Major Requirements – Core Courses
Type: Completion requirement

Prerequisites

Earn at least 29 credits from the following:

BIO 166 - Principles of Biology: Cells and Genes
BIO 167 - Principles of Biology: Organisms
CHE 166 - General Chemistry I
CHE 167 - General Chemistry Laboratory I
CHE 168 - General Chemistry 2
CHE 169 - General Chemistry Laboratory II
PHY 166 - General Physics I
PHY 167 - General Physics II

*BIO 166 and BIO 167 can be used to fulfill general education requirements. Both are prerequisites to all other biology courses.

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Additional Comments:

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Major Requirements – Biomedical Sciences Track

Type: Completion requirement

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BIO 267 - Comparative Anatomy of Vertebrates
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BIO 331 - Experimental Microbiology
BIO 333 - Endocrine Physiology
BIO 350 - Introduction to Immunology
BIO 351 - Immunology Laboratory
BIO 400 - Biological Chemistry
BIO 410 - Cell Physiology and Biochemistry
BIO 411 - Principles of Virology
BIO 415 - Medical Microbiology
BIO 420 - Molecular Biology
BIO 431 - Comparative Animal Physiology

List B

Earn at least 8 credits from the following:

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BIO 241 - Evolution, Species, and Biogeography
BIO 242 - Urban Agriculture: Gardening for Change
BIO 268 - Vertebrate Embryology
BIO 311 - Parasitology
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BIO 435 - Neurophysiology
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List C

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BIO 440 - Biology Journal Review
BIO 450 - Biology Seminar
BIO 471 - Research In Molecular Microbio
BIO 489 - Introduction to Experimental Biology
BIO 490 - Honors in Biological Sciences

BIO 489 may be repeated for a maximum 3 credits

Major Requirements – Organismic Sciences Track

Type: Completion requirement

Organismic Sciences at least 21 credits

Select courses from lists A, B, and C

List A

Earn at least 12 credits from the following:
BIO 229 - Astrobiology: Life and Health Beyond Earth
BIO 241 - Evolution, Species, and Biogeography
BIO 242 - Urban Agriculture: Gardening for Change
BIO 268 - Vertebrate Embryology
BIO 317 - Drugs, Brain and Behavior
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BIO 403 - Medicinal Plants
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BIO 415 - Medical Microbiology
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List C

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BIO 450 - Biology Seminar
BIO 471 - Research In Molecular Microbio
BIO 489 - Introduction to Experimental Biology

BIO 490 - Honors in Biological Sciences
BIO 489 may be repeated for a maximum 3 credits

Major Requirements – Brain Sciences Track

Type: Completion requirement

Brain Sciences At Least 21 Credits

Select courses from lists: A, B, and C

List A

Earn at least 14 credits from the following:

BIO 228 - Mammalian Physiology
BIO 317 - Drugs, Brain and Behavior
BIO 320 - Neural Development: From Genes and Cells to Brains
BIO 321 - Neural Development Laboratory
BIO 340 - Human Body and Brain
BIO 341 - Human Body and Brain Laboratory
BIO 400 - Biological Chemistry
BIO 420 - Molecular Biology
BIO 435 - Neurophysiology

List B

Earn at least 1 credits from the following:

BIO 440 - Biology Journal Review
BIO 450 - Biology Seminar
BIO 471 - Research In Molecular Microbio
BIO 489 - Introduction to Experimental Biology

BIO 490 - Honors in Biological Sciences

BIO 489 may be repeated for a maximum 3 credits

List C

Earn at least 6 credits from the following:

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PSY 308 - Motivation and Emotion
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PSY 317 - Psychology of Sensation and Perception
PSY 366 - Clinical Neuropsychology

PSY 166 can be used to fulfill General Education requirements and is a prerequisite to all other PSY courses. Students who complete PSY 166 before declaring the major only need to complete 6 credits in this area.

Major Requirements – Bio-Data Sciences Track

Type: Completion requirement

Bio-Data Sciences At Least 22 Credits

Select courses from lists: A, B, and C

List A

Earn at least 12 credits from the following:

BIO 241 - Evolution, Species, and Biogeography
BIO 242 - Urban Agriculture: Gardening for Change
BIO 270 - Invertebrate Zoology
BIO 271 - Invertebrate Zoology Laboratory
BIO 303 - Data Mining and Bioinformatics
BIO 330 - Plant Physiology
BIO 331 - Experimental Microbiology
BIO 336 - Marine Biology Lectures
BIO 339 - Ecology
BIO 400 - Biological Chemistry
BIO 403 - Medicinal Plants
BIO 420 - Molecular Biology
BIO 425 - Ichthyology
BIO 426 - Ichthyology Laboratory
BIO 503 - Topics in Urban Ecology

List B

Earn at least 1 credits from the following:

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Fulfill ALL of the following requirements:

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GEP 375 - Data Acquisition and Integration Methods for GIS Analysis
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AND

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GEH 245 - Introduction to Quantitative Methods of Geography
SOC 348 - Reasoning with Data
DAT 310 - Data Visualization

Additional Comments:

Students that take MAT 128, MAT 328 to satisfy the math requirement and take GEH 245, SOC 348, and DAT 310 to satisfy List C for the Bio-Data Sciences track would earn a minor in Data Science.

4. Rationale (Explain how this change will impact learning outcomes of the department and Major/Program):
The Bioenvironmental Track was previously changed to the Bio-Data Sciences Track. However, the former Bioenvironmental Track continues to exist in CUNYfirst and should be removed from all records.

5. **Date of departmental approval:** 02/27/26