



14 December 2022

RE: Updates to the Biology Major

To Whom It May Concern:

The Center for Life Sciences Education Curriculum Committee has voted to make two relatively small changes to the Biology Major and is requesting formal approval.

For all three specializations of the Biology BA Major, students are required to take supporting coursework in Organic Chemistry. Currently student may take Chem 2310, a condensed single semester of Organic Chemistry lecture OR the combination of Chem 2510 and 2520, the two-semester expanded lecture sequence. A small number of students who intend to apply to Physician Assistant programs are being caught in a situation when switching from other intended professional directions where they are unnecessarily needing to take additional coursework. Specifically, students applying to PA programs require an Organic Chemistry laboratory course. To that aim, we propose to add the combination of Chemistry 2510 (a lecture course) and 2540 (a lab course) as an option to fulfill the course requirements for Biology BA Major while also providing appropriate coursework for students to make progress toward their desired professional degree. This course option will fulfill the prerequisite requirements for any necessary upper-level coursework in the Major.

We use this opportunity to notify ASCC and CAA that the CLSE Curriculum Committee also previously voted to include EEOB 2510 (Anatomy) and EEOB 2520 (Physiology) as additional options in the required additional coursework list of the Life Sciences Education Specialization. Either of these courses will complement the five required courses in the major and provide students with a rounded experience in the discipline. (This small addition of options will also apply to the BS version of this specialization.)

Attached with this proposal are the updated Advising Sheets for the three Biology Major BA Specializations with these proposed changes included.

I welcome any questions or concerns you have about the proposed change.

Sincerely,

Adam Andrews
Assistant Director for Instruction

**Biology Major Checklist
Bachelor of Arts
Forensic Biology Specialization**

NAME _____
SEMESTER OF GRADUATION _____

DATE _____

General Education Requirements (32-39 credit hours)

- | | |
|--|--------------|
| <input type="checkbox"/> GE Launch Seminar (1) | AcadAff 1201 |
| <input type="checkbox"/> Foundations: Writing and Information Literacy (3) | _____ |
| <input type="checkbox"/> Foundations: Mathematics & Quantitative Reasoning (3-5) | _____ |
| <input type="checkbox"/> Foundations: Literacy, Visual & performing Arts (3) | _____ |
| <input type="checkbox"/> Foundations: Historical & Cultural Studies (3) | _____ |
| <input type="checkbox"/> Foundations: Natural Sciences (4-5) | _____ |
| <input type="checkbox"/> Foundations: Social & Behavioral Sciences (3) | _____ |
| <input type="checkbox"/> Foundations: Race, Ethnicity and Gender Diversity (3) | _____ |
| <input type="checkbox"/> Theme: Citizenship for a Diverse & Just World (4-6) | _____ |
| <input type="checkbox"/> Theme: Student Choice (4-6) | _____ |
| <input type="checkbox"/> GE Reflection (1) | AcadAff 4001 |

Required Arts & Sciences Courses (1-13 Credit Hours)

- | | |
|---|-------|
| <input type="checkbox"/> Arts & Sciences Survey (1) | _____ |
| <input type="checkbox"/> World Language (0-12) | _____ |

Required Supporting Courses (32-44 credit hours)

Biology (2 courses)

- Biology 1113.01 (4) or 1113.02 (5)*
- Biology 1114.01 (4) or 1114.02 (5)*
- _____ Substitution

* Can be used to fulfill the GEN Foundation: Natural Sciences requirement

Mathematics/Statistics

- Math 1148 (4)** – *College Algebra* AND
Math 1149 (3) – *Trigonometry*,
OR Math 1150 (5)** – *Pre-Calculus*
- _____ Substitution

** Can be used to fulfill the GEN Foundation: MQRM requirement

Physics (1 Course)

- Physics 1200 (alg) or 1250 (calc) (5)
- _____ Substitution

Chemistry (2 courses)

- Chemistry 1210 or 1610 or 1910H (5)
- Chemistry 1220 or 1620 or 1920H (5)
- _____ Substitution

Organic Chemistry

- Chemistry 2310 (4),
OR 2510 AND 2520 (8)
OR 2510 AND 2540 (6)
- _____ Substitution
- Waived

Anthropology (1 course)

- Anthro 2200 (4)
(optional, necessary for Anthro prereqs)

Core Course (4 credit hours)

- Biology 3401 (4) – *Integrated Biology*

**Biology Major Checklist
Bachelor of Arts
Forensic Biology Specialization**

Forensic Biology Specialization (14-22 credit hours)

Required

- Biochem 4511 (4), or 5613 AND 5614 (6)
- MolGen 4500 (3) or 4606 (4)

Additional Coursework (at least 3)***

- Anthro 5607 (3) – *Human Osteology*
- Anthro 5608 (3) – *Skeletal Biology*
- Anthro 5609 (3) – *Dental Anthropology*
- Anthro 5610 (3) – *Bioarchaeology*
- Anthro 5644 (3) – *Forensic Anthropology*
- BioChem 5615 (3) – *Biochemistry and Molecular Biology III*
- MolGen 5601† (3-4) – *Eukaryotic Molecular Genetics Lab*
- MolGen 5607 (3) – *Cell Biology*
- MolGen 5701 (3) – *DNA Transactions and Gene Regulation*
- Micro 4000† or 4000.01† or 4000.02† (4) or 4100 (5)
- MolGen 4591S or equiv. (1) – *DNA Fingerprinting Workshop in Columbus Public Schools*

Electives

Embedded Literacies (no additional credit hours)

- | | |
|--|--------------|
| <input type="checkbox"/> Advanced Writing | Biology 3401 |
| <input type="checkbox"/> Advanced Data Analytics | Biology 3401 |
| <input type="checkbox"/> Technology Literacy | Biology 3401 |

TOTAL BioSci HOURS

TOTAL SEMESTER UNITS

Notes:

- Core, specialization, and elective courses must total 32 semester units, and must include three laboratory courses.
- At least 25 of the 32 semester units must be courses in Biochemistry, Biology, EEOB, Microbiology, or Molecular Genetics, and courses outside these departments must be pre-approved by a Biology advisor. At most 7 credit hours from Anthropology may be counted toward the Biology major.
- Electives must be at the 2000 level or above, except for Biology which must be at the 3000 level or above.
- Up to 3 credit hours of research, individual study, or internship may be counted toward the major and, with approval of a major advisor, may be counted as a laboratory course.
- Transfer credit allowed - no more than one half of the credit hours required on the major.
- Honors versions of courses substitute freely.

† Courses within the major with a laboratory component

Biology Major Checklist
Bachelor of Arts
Pre-Health Professions Specialization

NAME _____
 SEMESTER OF GRADUATION _____

DATE _____

General Education Requirements (32-39 credit hours)

- | | |
|--|--------------|
| <input type="checkbox"/> GE Launch Seminar (1) | AcadAff 1201 |
| <input type="checkbox"/> Foundations: Writing and Information Literacy (3) | _____ |
| <input type="checkbox"/> Foundations: Mathematics & Quantitative Reasoning (3-5) | _____ |
| <input type="checkbox"/> Foundations: Literacy, Visual & performing Arts (3) | _____ |
| <input type="checkbox"/> Foundations: Historical & Cultural Studies (3) | _____ |
| <input type="checkbox"/> Foundations: Natural Sciences (4-5) | _____ |
| <input type="checkbox"/> Foundations: Social & Behavioral Sciences (3) | _____ |
| <input type="checkbox"/> Foundations: Race, Ethnicity and Gender Diversity (3) | _____ |
| <input type="checkbox"/> Theme: Citizenship for a Diverse & Just World (4-6) | _____ |
| <input type="checkbox"/> Theme: Student Choice (4-6) | _____ |
| <input type="checkbox"/> World Language (0-12) | _____ |
| <input type="checkbox"/> GE Reflection (1) | AcadAff 4001 |

Required Arts & Sciences Courses (1-13 Credit Hours)

- | | |
|---|-------|
| <input type="checkbox"/> Arts & Sciences Survey (1) | _____ |
| <input type="checkbox"/> World Language (0-12) | _____ |

Required Supporting Courses (32-40 credit hours)

Biology (2 courses)

- Biology 1113.01 (4) or 1113.02 (5)*
- Biology 1114.01 (4) or 1114.02 (5)*
- _____ Substitution

* Can be used to fulfill the GEN Foundation: Natural Sciences requirement

Mathematics/Statistics

- Math 1148 (4)** – *College Algebra* AND
Math 1149 (3) – *Trigonometry*,
OR Math 1150 (5) **– *Pre-Calculus*
- _____ Substitution

** Can be used to fulfill the GEN Foundation: MQRM requirement

Physics (1 Course)

- Physics 1200 (alg) or 1250 (calc) (5)
- _____ Substitution

Chemistry (2 courses)

- Chemistry 1210 or 1610 or 1910H (5)
- Chemistry 1220 or 1620 or 1920H (5)
- _____ Substitution

Organic Chemistry

Chemistry 2310 (4),
 OR 2510 AND 2520 (8)
 OR 2510 AND 2540 (6)

- _____ Substitution
- Waived

Core Course (4 credit hours)

- Biology 3401 (4) – *Integrated Biology*

Biology Major Checklist
Bachelor of Arts
Pre-Health Professions Specialization

Pre-Health Professions Specialization (15-25 credit hours)

Required

- MolGen 4500 (3) or 4606 (4)

Additional Coursework (at least 4)

- Biochem 4511 (4), or 5613 AND 5614 (6)
- EEOB 3310 or 3310.01 or 3310.02† (4) – *Evolution*
- Micro 4000† or 4000.01† or 4000.02† (4) or 4100 (5)
- EEOB 3510 or MolGen 4700 or MolGen 5607 or MolGen 5608 (3) – *Cell Biology*
- EEOB 3520† (3) – *Microscopic Anatomy / Histology*
- Anatomy 2300.01† (4) or 3300.01† (5) or EEOB 2510† (3) – *Human Anatomy*
- EEOB 4510† (3) – *Comparative Vertebrate Anatomy*
- Physio 3200 (5) or EEOB 2520 (3) – *Human Physiology* or EEOB 4520 (3) *Comparative Physiology*

Electives

Embedded Literacies (no additional credit hours)

- | | |
|--|--------------|
| <input type="checkbox"/> Advanced Writing | Biology 3401 |
| <input type="checkbox"/> Advanced Data Analytics | Biology 3401 |
| <input type="checkbox"/> Technology Literacy | Biology 3401 |

TOTAL BioSci HOURS

TOTAL SEMESTER UNITS

Notes:

- Core, specialization, and elective courses must total 32 semester units, and must include three laboratory courses.
- At least 25 of the 32 semester units must be courses in Biochemistry, Biology, EEOB, Microbiology, or Molecular Genetics, and courses outside these departments must be pre-approved by a Biology advisor.
- Electives must be at the 2000 level or above, except for Biology which must be at the 3000 level or above.
- Up to 3 credit hours of research, individual study, or internship may be counted toward the major and, with approval of a major advisor, may be counted as a laboratory course.
- Transfer credit allowed - no more than one half of the credit hours required on the major.
- Honors versions of courses substitute freely.

† Courses within the major with a laboratory component

Biology Major Checklist
Bachelor of Arts
Life Science Education Specialization

NAME _____
SEMESTER OF GRADUATION _____

DATE _____

General Education Requirements (32-39 credit hours)

- | | |
|--|--------------|
| <input type="checkbox"/> GE Launch Seminar (1) | AcadAff 1201 |
| <input type="checkbox"/> Foundations: Writing and Information Literacy (3) | _____ |
| <input type="checkbox"/> Foundations: Mathematics & Quantitative Reasoning (3-5) | _____ |
| <input type="checkbox"/> Foundations: Literacy, Visual & performing Arts (3) | _____ |
| <input type="checkbox"/> Foundations: Historical & Cultural Studies (3) | _____ |
| <input type="checkbox"/> Foundations: Natural Sciences (4-5) | _____ |
| <input type="checkbox"/> Foundations: Social & Behavioral Sciences (3) | _____ |
| <input type="checkbox"/> Foundations: Race, Ethnicity and Gender Diversity (3) | _____ |
| <input type="checkbox"/> Theme: Citizenship for a Diverse & Just World (4-6) | _____ |
| <input type="checkbox"/> Theme: Student Choice (4-6) | _____ |
| <input type="checkbox"/> GE Reflection (1) | AcadAff 4001 |

Required Arts & Sciences Courses (1-13 Credit Hours)

- | | |
|---|-------|
| <input type="checkbox"/> Arts & Sciences Survey (1) | _____ |
| <input type="checkbox"/> World Language (0-12) | _____ |

Required Supporting Courses (32-40 credit hours)

Biology (2 courses)

- Biology 1113.01 (4) or 1113.02 (5)*
- Biology 1114.01 (4) or 1114.02 (5)*
- _____ Substitution

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Mathematics/Statistics

- Math 1148 (4)** – *College Algebra* AND Math 1149 (3) – *Trigonometry*, OR Math 1150 (5)** – *Pre-Calculus*
- _____ Substitution

** Can be used to fulfill the GEN Foundation: MQRM requirement

Physics (1 Course)

- Physics 1200 (alg) or 1250 (calc) (5)
- _____ Substitution

Chemistry (2 courses)

- Chemistry 1210 or 1610 or 1910H (5)
- Chemistry 1220 or 1620 or 1920H (5)
- _____ Substitution

Organic Chemistry

- Chemistry 2310 (4), OR 2510 AND 2520 (8), OR 2510 AND 2540 (6)
- _____ Substitution
- Waived

Core Course (4 credit hours)

- Biology 3401 (4) – *Integrated Biology*

Biology Major Checklist
Bachelor of Arts
Life Sciences Education Specialization

Pre-Health Professions Specialization (21-28 credit hours)

Required (5 courses)

- Biochem 4511 (4), or 5613 AND 5614 (6)
- MolGen 4500 (3) or 4606 (4)
- EEOB 3310 or 3310.01 or 3310.02† (4) – *Evolution*
- Micro 4000† or 4000.01† or 4000.02† (4) or 4100 (5)
- MolGen 3300† (3) – *General Plant Biology*

Additional Coursework (at least 2)

- EEOB 2220† (2) – *Biodiversity of Ohio: Birds*
- EEOB 2510† (3) – *Human Anatomy*
- EEOB 2520 (3) – *Human Physiology*
- EEOB 3320 (strongly recommended) † (3) – *Organismal Diversity*
- EEOB 4210 (2) – *Ecology and Evolution: Vertebrates*
- EEOB 4220† (3) – *Ecology and Evolution: Mammals*
- EEOB 4230 (2) – *Ecology and Evolution: Invertebrates*
- EEOB 5430† (3) – *Fish Ecology*
- OR EEOB 5930† (3) – *Ichthyology*
- Entomology 4000 (3) – *General Entomology Lecture*
- MolGen 4591S or equiv. (1) – *DNA Fingerprinting Workshop with Columbus Public Schools*

Electives

Embedded Literacies (no additional credit hours)

- | | |
|--|--------------|
| <input type="checkbox"/> Advanced Writing | Biology 3401 |
| <input type="checkbox"/> Advanced Data Analytics | Biology 3401 |
| <input type="checkbox"/> Technology Literacy | Biology 3401 |

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