From:	Vankeerbergen, Bernadette
To:	Smith, Randy; Reed, Katie
Cc:	Martin, Andrew; Nagar, Ila; Jenkins, Mary Ellen; Steele, Rachel
Subject:	Informational item--Updates BA, BS, and Minor - Biology
Date:	Thursday, February 20, 2025 4:15:48 PM
Attachments:	February 2025 CLSE Informational Items Cover Letter.pdf image001.png

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Dear Randy and Katie,

Please find attached an informational item to share at an upcoming CAA meeting.

Professor Ila Nagar, Chair of ASCC, shared the proposed changes as an informational item at the ASC Curriculum Committee meeting on Friday, February 14. The CLSE contact for this informational item is Adam Andrews, Assistant Director for Curriculum & Instruction.

Best regards,
Bernadette

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7 February 2025

Vice Provost W. Randy Smith
Council on Academic Affairs
Office of Academic Affairs
University Square South
15 E. 15th Avenue
Columbus, OH 43210

Dear Dr. Smith,

The Center for Life Sciences Education is respectfully submitting revisions to the Biology Major and Minor as detailed below. These changes have been unanimously approved by the CLSE Curriculum Committee and we request they be formally approved for implementation effective for the Summer 2025 Semester.

Updates to the Major and Minor

These requested changes are printed in red on the attached advising sheets (BS = Appendix A, BA = Appendix B, Minor = Appendix C).

- Biology 1111 and 1112 are recently approved courses that, when combined, address the same course learning outcomes as Biology 1113. We propose to allow the combination of 1111 and 1112 to satisfy the same requirement as Biology 1113 in all areas of the Major and Minor.
- The Department of Evolution, Ecology, and Organismal Biology (EEOB) has replaced their *Human Anatomy* course, EEOB 2510, with a new course, EEOB 2511, and will cease offering the previous version as of Spring 2025. We request to update our advising sheets to allow 2511 wherever 2510 was previously approved.
- For both the BA and BS in the *Life Science Education* Specialization, we propose to add an additional checkbox options in the area of Ecology for the Pick 2 Additional Major Coursework. These courses are to include EEOB 3270, 3410, 3420, and 4240.

- For all Specializations of the Biology BA, we propose to add Math 1120 AND 1121 as an option to fulfill the Mathematics Supporting Course requirement. This combination is considered the *de facto* equivalent of Math 1075 through 1150 and therefore mirrors other previously approved options.
- For all Specializations of the Biology BA and BS, we propose allowing the 'stretch' version of the existing supporting course, Physics 1250, as the two-semester version of Physics 1248 + 1249. The course learning outcomes for the two-semester version mirror those of the single semester offering and are therefore appropriate equivalents to allow on the Major.
- For all Specializations of the Biology BS, we propose allowing the 'stretch' version of the existing supporting course, Math 1151, as the two semester version of the combination Math 1140 + 1141. The course learning outcomes for the two-semester version mirrors those of the single semester offering and are therefore appropriate equivalents to allow on the Major.
- We wish to correct an error in a recently approved proposal affecting the Biology Minor. In the proposal, a discrepancy exists between the proposal and the advising sheet relative to the required Core Course options. Students completing the Minor will not be required to complete the Capstone course, Biology 4901. The advising sheet mistakenly included this course despite the proposal explicitly indicating the course would be required only of the Biology Major.

I welcome any questions or concerns about these proposed changes and appreciate your consideration of the request.

Sincerely,

Adam Andrews
Assistant Director for Curriculum & Instruction

Attachments
Appendix A: Advising sheets for the four BS Specializations of the Biology Major
Appendix B: Advising sheets for the four BA Specializations of the Biology Major
Appendix C: Advising sheet for the Biology Minor

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Appendix A: Advising sheets for the four BS Specializations of the Biology Major

Biology Major Checklist
Bachelor of Science
Forensics Biology Specialization

NAME_____ DATE_____
SEMESTER OF GRADUATION _____

General Education Requirements (32-39 credit hours)

- ❒ GE Launch Seminar (1) — GENED 1201
- ❒ Foundations: Writing and Information Literacy (3) — _____
- ❒ Foundations: Mathematics & Quantitative Reasoning / Data Analysis (3-5) — _____
- ❒ Foundations: Literacy, Visual & performing Arts (3) — _____
- ❒ Foundations: Historical & Cultural Studies (3) — _____
- ❒ Foundations: Natural Sciences (4-5) — _____
- ❒ Foundations: Social & Behavioral Sciences (3) — _____
- ❒ Foundations: Race, Ethnicity and Gender Diversity (3) — _____
- ❒ Theme: Citizenship for a Diverse & Just World (4-6) — _____
- ❒ Theme: Student Choice (4-6) — _____
- ❒ GE Reflection (1) — GENED 4001

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

- ❒ Arts & Sciences Survey (1) — _____
- ❒ World Language (0-12) — _____

Required Supporting Courses (48-65 credit hours)

Biology (Check 2 boxes)
- ❒ Biology 1113.01 (4) or 1113.02 (5)*
  or Biology 1111 (3) and 1112 (4)*
- ❒ Biology 1114.01 (4) or 1114.02 (5)*
- ❒ _____Substitution

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

Mathematics/Statistics (Check 2 boxes)
- ❒ Math 1151 or 1156 (5)**
  OR 1140 (4) AND 1141 (4)
- ❒ Math 1152 (5) or Stat 1450 (3) or Stat 2480 (3) or Stat 2450 (3)
- ❒ _____Substitution

** Can be used to fulfill the GEN Foundation; MQR/DA requirement

Physics (Check 2 boxes)
- ❒ Physics 1200 (alg) or 1250 (calc) (5)
  OR 1248 (4) AND 1249 (3)
- ❒ Physics 1201 (alg) or 1251 (calc) (5)
- ❒ _____Substitution

Chemistry (Check 2 boxes)
- ❒ Chemistry 1206 (3) and 1208 (4)
  or 1210 or 1610 or 1910H (5)
- ❒ Chemistry 1220 or 1620 or 1920H (5)
- ❒ _____Substitution

Organic Chemistry (Check boxes for 2 lectures + 2 labs)
- ❒ Chemistry 2510 or 2610 or 2910H (4) – Lecture 1
- ❒ Chemistry 2520 or 2620 or 2920H (4) – Lecture 2
- ❒ Chemistry 2540 or 2940H (2) – Lab 1
- ❒ Chemistry 2550 or 2950H (2) – Lab 2
- ❒ _____Substitution

Anthropology (1 course)
- ❒ Anthro 2200 (4) (*optional, necessary for Anthro prereqs)*

† Courses within the major with a laboratory component

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Biology Major Checklist
Bachelor of Science
Forensics Biology Specialization

Core Course (4-5 credit hours) – Required (Check 1 box)

- ❒ Biology 3401 (4) – *Integrated Biology*
- ❒ Biology 3501 (3) and 4901 (2)

Forensic Biology (14-22 credit hours)

Required (Check 2 boxes)

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

Additional Coursework (Check at least 3 boxes)***

- ❒ 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 4581S or 4591S or equiv. (1) – *DNA Fingerprinting Workshop in Columbus Public Schools*

Electives

_____ _____

_____ _____

Embedded Literacies (no additional credit hours)

❒ Advanced Writing	Biology 3401 or 3501
❒ Advanced Data Analytics	Biology 3401 or 3501
❒ Technology Literacy	Biology 3401 or 3501

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 and Biochemistry 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.

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Biology Major Checklist
Bachelor of Science
Integrated General Biology Specialization

NAME_____ DATE_____
SEMESTER OF GRADUATION _____

General Education Requirements (32-39 credit hours)

- ❒ GE Launch Seminar (1) — GENED 1201
- ❒ Foundations: Writing and Information Literacy (3) — _____
- ❒ Foundations: Mathematics & Quantitative Reasoning / Data Analysis (3-5) — _____
- ❒ Foundations: Literacy, Visual & performing Arts (3) — _____
- ❒ Foundations: Historical & Cultural Studies (3) — _____
- ❒ Foundations: Natural Sciences (4-5) — _____
- ❒ Foundations: Social & Behavioral Sciences (3) — _____
- ❒ Foundations: Race, Ethnicity and Gender Diversity (3) — _____
- ❒ Theme: Citizenship for a Diverse & Just World (4-6) — _____
- ❒ Theme: Student Choice (4-6) — _____
- ❒ GE Reflection (1) — GENED 4001

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

- ❒ Arts & Sciences Survey (1) — _____
- ❒ World Language (0-12) — _____

Required Supporting Courses (48-61 credit hours)

Biology (Check 2 boxes)

- ❒ Biology 1113.01 (4) or 1113.02 (5)*
  or Biology 1111 (3) and 1112 (4)*
- ❒ Biology 1114.01 (4) or 1114.02 (5)*
- ❒ _____Substitution

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

Mathematics/Statistics (Check 2 boxes)

- ❒ Math 1151 or 1156 (5)**
  OR 1140 (4) AND 1141 (4)
- ❒ Math 1152 (5) or Stat 1450 (3) or Stat 2480 (3) or Stat 2450 (3)
- ❒ _____Substitution

** Can be used to fulfill the GEN Foundation; MQR/DA requirement

Physics (Check 2 boxes)

- ❒ Physics 1200 (alg) or 1250 (calc) (5)
  OR 1248 (4) AND 1249 (3)
- ❒ Physics 1201 (alg) or 1251 (calc) (5)
- ❒ _____Substitution

Chemistry (Check 2 boxes)

- ❒ Chemistry 1206 (3) and 1208 (4) or 1210 or 1610 or 1910H (5)
- ❒ Chemistry 1220 or 1620 or 1920H (5)
- ❒ _____Substitution

Organic Chemistry (Check boxes for 2 lectures + 2 labs)

- ❒ Chemistry 2510 or 2610 or 2910H (4) – Lecture 1
- ❒ Chemistry 2520 or 2620 or 2920H (4) – Lecture 2
- ❒ Chemistry 2540 or 2940H (2) – Lab 1
- ❒ Chemistry 2550 or 2950H (2) – Lab 2
- ❒ _____Substitution

† Courses within the major with a laboratory component

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Biology Major Checklist
Bachelor of Science
Integrated General Biology Specialization

Core Course (4-5 credit hours) – Required (Check 1 box)

- ❒ Biology 3401 (4) – *Integrated Biology*
- ❒ Biology 3501 (3) and 4901 (2)

Integrated Biology Specialization (28-36 credit hours)

Required (Check 6 boxes)

- ❒ MolGen 4500 (3) or 4606 (4)
- ❒ Micro 4000† or 4000.01† or 4000.02† (4) or 4100† (5)
- ❒ Biochem 4511 (4), or 5613 AND 5614 (6)
- ❒ EEOB 3510 or MolGen 4700 or MolGen 5607 or MolGen 5608 (3) – *Cell Biology*
- ❒ EEOB 3310 or 3310.01 or 3310.02† (4) – *Evolution*
- ❒ EEOB 3410† (4) - *Ecology*

Two Advanced (4000+) electives (6-10)

- ❒ _____( )
- ❒ _____( )

Electives

_____ _____

_____ _____

Embedded Literacies (no additional credit hours)

❒ Advanced Writing	Biology 3401 or 3501
❒ Advanced Data Analytics	Biology 3401 or 3501
❒ Technology Literacy	Biology 3401 or 3501

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 and Biochemistry 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.

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Biology Major Checklist
Bachelor of Science
Life Science Education Specialization

NAME_____ DATE_____
SEMESTER OF GRADUATION _____

General Education Requirements (32-39 credit hours)

- ❒ GE Launch Seminar (1) — GENED 1201
- ❒ Foundations: Writing and Information Literacy (3) — _____
- ❒ Foundations: Mathematics & Quantitative Reasoning / Data Analysis (3-5) — _____
- ❒ Foundations: Literacy, Visual & performing Arts (3) — _____
- ❒ Foundations: Historical & Cultural Studies (3) — _____
- ❒ Foundations: Natural Sciences (4-5) — _____
- ❒ Foundations: Social & Behavioral Sciences (3) — _____
- ❒ Foundations: Race, Ethnicity and Gender Diversity (3) — _____
- ❒ Theme: Citizenship for a Diverse & Just World (4-6) — _____
- ❒ Theme: Student Choice (4-6) — _____
- ❒ GE Reflection (1) — GENED 4001

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

- ❒ Arts & Sciences Survey (1) — _____
- ❒ World Language (0-12) — _____

Required Supporting Courses (48-61 credit hours)

Biology (Check 2 boxes)
- ❒ Biology 1113.01 (4) or 1113.02 (5)*
  or Biology 1111 (3) and 1112 (4)*
- ❒ Biology 1114.01 (4) or 1114.02 (5)*
- ❒ _____Substitution

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

Mathematics/Statistics (Check 2 boxes)
- ❒ Math 1151 or 1156 (5)**
  OR 1140 (4) AND 1141 (4)
- ❒ Math 1152 (5) or Stat 1450 (3) or Stat 2480 (3) or Stat 2450 (3)
- ❒ _____Substitution

** Can be used to fulfill the GEN Foundation; MQR/DA requirement

Physics (Check 2 boxes)
- ❒ Physics 1200 (alg) or 1250 (calc) (5)
  OR 1248 (4) AND 1249 (3)
- ❒ Physics 1201 (alg) or 1251 (calc) (5)
- ❒ _____Substitution

Chemistry (Check 2 boxes)
- ❒ Chemistry 1206 (3) and 1208 (4) or 1210 or 1610 or 1910H (5)
- ❒ Chemistry 1220 or 1620 or 1920H (5)
- ❒ _____Substitution

Organic Chemistry (Check boxes for 2 lectures + 2 labs)
- ❒ Chemistry 2510 or 2610 or 2910H (4) – Lecture 1
- ❒ Chemistry 2520 or 2620 or 2920H (4) – Lecture 2
- ❒ Chemistry 2540 or 2940H (2) – Lab 1
- ❒ Chemistry 2550 or 2950H (2) – Lab 2
- ❒ _____Substitution

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Biology Major Checklist
Bachelor of Science
Life Science Education Specialization

Core Course (4-5 credit hours) – Required (Check 1 box)

- ❒ Biology 3401 (4) – *Integrated Biology*
- ❒ Biology 3501 (3) and 4901 (2)

Life Science Education Specialization (21-28 credit hours)

Required (Check 5 boxes)

- ❒ 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 (Check at least 2 boxes)

- ❒ EEOB 2220† (2) – *Biodiversity of Ohio: Birds*
- ❒ EEOB 2510† (3) or 2511† (4) – *Human Anatomy*
- ❒ EEOB 2520 (3) – *Human Physiology*
- ❒ EEOB 3320 (strongly recommended) † (3) – *Organismal Diversity*
- ❒ EEOB 3270 (3) - *Infectious Disease Ecology, Evolution, and Transmission*
- ❒ EEOB 3410 (4) - *Ecology*
- ❒ EEOB 3420 (4) – *Behavioral Ecology*
- ❒ EEOB 4210 (2) – *Ecology and Evolution: Vertebrates*
- ❒ EEOB 4220† (3) – *Ecology and Evolution: Mammals*
- ❒ EEOB 4230 (2) – *Ecology and Evolution: Invertebrates*
- ❒ EEOB 4240 (3) - *Ecology & Evolution of Plants & People*
- ❒ EEOB 5430† (3) – *Fish Ecology* OR EEOB 5930† (3) – *Ichthyology*
- ❒ Entomology 4000 (3) – *General Entomology Lecture*
- ❒ MolGen 4581S or 4591S or equiv. (1) – *DNA Fingerprinting Workshop with Columbus Public Schools*

Electives

_____ _____

_____ _____

Embedded Literacies (no additional credit hours)

❒ Advanced Writing	Biology 3401 or 3501
❒ Advanced Data Analytics	Biology 3401 or 3501
❒ Technology Literacy	Biology 3401 or 3501

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 or Biochemistry 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

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Biology Major Checklist
Bachelor of Science
Pre-Health Professions Specialization

NAME_____ DATE_____
SEMESTER OF GRADUATION _____

General Education Requirements (32-39 credit hours)

- ❒ GE Launch Seminar (1) — GENED 1201
- ❒ Foundations: Writing and Information Literacy (3) — _____
- ❒ Foundations: Mathematics & Quantitative Reasoning / Data Analysis (3-5) — _____
- ❒ Foundations: Literacy, Visual & performing Arts (3) — _____
- ❒ Foundations: Historical & Cultural Studies (3) — _____
- ❒ Foundations: Natural Sciences (4-5) — _____
- ❒ Foundations: Social & Behavioral Sciences (3) — _____
- ❒ Foundations: Race, Ethnicity and Gender Diversity (3) — _____
- ❒ Theme: Citizenship for a Diverse & Just World (4-6) — _____
- ❒ Theme: Student Choice (4-6) — _____
- ❒ GE Reflection (1) — GENED 4001

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

- ❒ Arts & Sciences Survey (1) — _____
- ❒ World Language (0-12) — _____

Required Supporting Courses (48-61 credit hours)

Biology (Check 2 boxes)
- ❒ Biology 1113.01 (4) or 1113.02 (5)*
  or Biology 1111 (3) and 1112 (4)*
- ❒ Biology 1114.01 (4) or 1114.02 (5)*
- ❒ _____Substitution

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

Mathematics/Statistics (Check 2 boxes)
- ❒ Math 1151 or 1156 (5)**
  OR 1140 (4) AND 1141 (4)
- ❒ Math 1152 (5) or Stat 1450 (3) or Stat 2480 (3) or Stat 2450 (3)
- ❒ _____Substitution

** Can be used to fulfill the GEN Foundation; MQR/DA requirement

Physics (Check 2 boxes)
- ❒ Physics 1200 (alg) or 1250 (calc) (5)
  OR 1248 (4) AND 1249 (3)
- ❒ Physics 1201 (alg) or 1251 (calc) (5)
- ❒ _____Substitution

Chemistry (Check 2 boxes)
- ❒ Chemistry 1206 (3) and 1208 (4) or 1210 or 1610 or 1910H (5)
- ❒ Chemistry 1220 or 1620 or 1920H (5)
- ❒ _____Substitution

Organic Chemistry (Check boxes for 2 lectures + 2 labs)
- ❒ Chemistry 2510 or 2610 or 2910H (4) – Lecture 1
- ❒ Chemistry 2520 or 2620 or 2920H (4) – Lecture 2
- ❒ Chemistry 2540 or 2940H (2) – Lab 1
- ❒ Chemistry 2550 or 2950H (2) – Lab 2
- ❒ _____Substitution

† Courses within the major with a laboratory component

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Biology Major Checklist
Bachelor of Science
Pre-Health Professions Specialization

Core Course (4-5 credit hours) – Required (Check 1 box)

- ❒ Biology 3401 (4) – *Integrated Biology*
- ❒ Biology 3501 (3) and 4901 (2)

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

Required

- ❒ MolGen 4500 (3) or 4606 (4)

Additional Coursework (Check at least 4 boxes)

- ❒ 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) or 2511† (4) – *Human Anatomy*
- ❒ EEOB 4510† (3) – *Comparative Vertebrate Anatomy*
- ❒ Physio 3200 (5) or EEOB 2520 (3) – *Human Physiology* or EEOB 4520 (3) *Comparative Physiology*
- ❒ EEOB 3270 (3) or 3320 (3) or 3410 (4) or 3420 (4) or 4240 (3) – *Ecology*

Electives

_____ _____

_____ _____

Embedded Literacies (no additional credit hours)

❒ Advanced Writing	Biology 3401 or 3501
❒ Advanced Data Analytics	Biology 3401 or 3501
❒ Technology Literacy	Biology 3401 or 3501

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 or Biochemistry 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

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Appendix B: Advising sheets for the four BA Specializations of the Biology Major

Biology Major Checklist
Bachelor of Arts
Forensic Biology Specialization

NAME_____ DATE_____
SEMESTER OF GRADUATION _____

General Education Requirements (32-39 credit hours)

❒ GE Launch Seminar (1)	GENED 1201
❒ Foundations: Writing and Information Literacy (3)	_____
❒ Foundations: Mathematics & Quantitative Reasoning / Data Analysis (3-5)	_____
❒ Foundations: Literacy, Visual & performing Arts (3)	_____
❒ Foundations: Historical & Cultural Studies (3)	_____
❒ Foundations: Natural Sciences (4-5)	_____
❒ Foundations: Social & Behavioral Sciences (3)	_____
❒ Foundations: Race, Ethnicity and Gender Diversity (3)	_____
❒ Theme: Citizenship for a Diverse & Just World (4-6)	_____
❒ Theme: Student Choice (4-6)	_____
❒ GE Reflection (1)	GENED 4001

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

❒ Arts & Sciences Survey (1)	_____
❒ World Language (0-12)	_____

Required Supporting Courses (32-53 credit hours)

Biology (Check 2 boxes)
- ❒ Biology 1113.01 (4) or 1113.02 (5) or Biology 1111 (3) and 1112 (4)*
- ❒ Biology 1114.01 (4) or 1114.02 (5)*
- ❒ _____Substitution

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

Mathematics/Statistics (Check 1 box)
- ❒ Math 1148 (4)** – *College Algebra* AND Math 1149 (3) – *Trigonometry*, OR Math 1148 (4) and Stat 1450 (3), OR Math 1120 (5) AND 1121 (5) OR Math 1150 (5)** – *Pre-Calculus*
- ❒ _____Substitution

** Can be used to fulfill the GEN Foundation: MQR/DA requirement

Physics (Check 1 box)
- ❒ Physics 1200 (alg) or 1250 (calc) (5) OR 1248 (4) AND 1249 (3)
- ❒ _____Substitution

Chemistry (Check 2 boxes)
- ❒ Chemistry 1206 (3) AND 1208 (4) or 1210 or 1610 or 1910H (5)
- ❒ Chemistry 1220 or 1620 or 1920H (5)
- ❒ _____Substitution

Organic Chemistry (Check 1 box)
- ❒ 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 prereq*)

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Biology Major Checklist
Bachelor of Arts
Forensic Biology Specialization

Core Course (4-5 credit hours) – Required (Check 1 box)

- ❒ Biology 3401 (4) – *Integrated Biology*
- ❒ Biology 3501 (3) and 4901 (2)

Forensic Biology Specialization (14-22 credit hours)

Required (Check 2 boxes)

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

Additional Coursework (Check at least 3 boxes)***

- ❒ 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 4581S or 4591S or equiv. (1) – *DNA Fingerprinting Workshop in Columbus Public Schools*

Electives

_____ _____

_____ _____

Embedded Literacies (no additional credit hours)

❒ Advanced Writing	Biology 3401 or 3501
❒ Advanced Data Analytics	Biology 3401 or 3501
❒ Technology Literacy	Biology 3401 or 3501

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 and Biochemistry 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.

THE OHIO STATE UNIVERSITY

Biology Major Checklist
Bachelor of Arts
Integrated General Biology Specialization

NAME_____ DATE_____
SEMESTER OF GRADUATION _____

General Education Requirements (32-39 credit hours)

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

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

❒ Arts & Sciences Survey (1)	_____
❒ World Language (0-12)	_____

Required Supporting Courses (32-49 credit hours)

Biology (2 courses)
- ❒ Biology 1113.01 (4) or 1113.02 (5)*
  or Biology 1111 (3) and 1114 (4)*
- ❒ 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 1148 (4) AND Stat 1450 (3),
  OR Math 1120 (5) AND 1121 (5)
  OR Math 1150 (5) **– *Pre-Calculus*
- ❒ _____Substitution

** Can be used to fulfill the GEN Foundation: MQR/DA requirement

Physics (1 Course)
- ❒ Physics 1200 (alg) or 1250 (calc) (5)
  OR 1248 (4) AND 1249 (3)
- ❒ _____Substitution

Chemistry (2 courses)
- ❒ Chemistry 1206 (3) and 1208 (4)
  Or 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

THE OHIO STATE UNIVERSITY

Biology Major Checklist
Bachelor of Arts
Integrated General Biology Specialization

Core Course (4-5 credit hours) – Required (Check 1 box)

- ❒ Biology 3401 (4) – *Integrated Biology*
- ❒ Biology 3501 (3) and 4901 (2)

Integrated Biology Specialization (28-36 credit hours)

Required (Check 6 boxes)

- ❒ MolGen 4500 (3) or 4606 (4)
- ❒ Micro 4000† or 4000.01† or 4000.02† (4) or 4100† (5)
- ❒ Biochem 4511 (4), or 5613 AND 5614 (6)
- ❒ EEOB 3510 or MolGen 4700 or MolGen 5607 or MolGen 5608 (3) – *Cell Biology*
- ❒ EEOB 3310 or 3310.01 or 3310.02† (4) – *Evolution*
- ❒ EEOB 3410† (4) - *Ecology*

Two Advanced (4000+) electives (6-10)

- ❒ _____( )
- ❒ _____( )

Electives

_____ _____

_____ _____

Embedded Literacies (no additional credit hours)

❒ Advanced Writing	Biology 3401 or 3501
❒ Advanced Data Analytics	Biology 3401 or 3501
❒ Technology Literacy	Biology 3401 or 3501

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 and Biochemistry 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.

THE OHIO STATE UNIVERSITY

Biology Major Checklist
Bachelor of Arts
Life Science Education Specialization

NAME_____ DATE_____
SEMESTER OF GRADUATION _____

General Education Requirements (32-39 credit hours)

❒ GE Launch Seminar (1)	GENED 1201
❒ Foundations: Writing and Information Literacy (3)	_____
❒ Foundations: Mathematics & Quantitative Reasoning / Data Analysis (3-5)	_____
❒ Foundations: Literacy, Visual & performing Arts (3)	_____
❒ Foundations: Historical & Cultural Studies (3)	_____
❒ Foundations: Natural Sciences (4-5)	_____
❒ Foundations: Social & Behavioral Sciences (3)	_____
❒ Foundations: Race, Ethnicity and Gender Diversity (3)	_____
❒ Theme: Citizenship for a Diverse & Just World (4-6)	_____
❒ Theme: Student Choice (4-6)	_____
❒ GE Reflection (1)	GENED 4001

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

❒ Arts & Sciences Survey (1)	_____
❒ World Language (0-12)	_____

Required Supporting Courses (32-49 credit hours)

Biology (Check 2 boxes)

- ❒ Biology 1113.01 (4) or 1113.02 (5)*
  or Biology 1111 (3) and 1112 (4)*
- ❒ Biology 1114.01 (4) or 1114.02 (5)*
- ❒ _____Substitution

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

Mathematics/Statistics (Check 1 box)

- ❒ Math 1148 (4)** – *College Algebra* AND
  Math 1149 (3) – *Trigonometry*,
  OR Math 1148 (4) and Stat 1450 (3),
  OR Math 1120 (5) AND 1121 (5)
  OR Math 1150 (5)** – *Pre-Calculus*
- ❒ _____Substitution

** Can be used to fulfill the GEN Foundation: MQR/DA requirement

Physics (Check 1 box)

- ❒ Physics 1200 (alg) or 1250 (calc) (5)
  OR 1248 (4) AND 1249 (3)
- ❒ _____Substitution

Chemistry (Check 2 boxes)

- ❒ Chemistry 1206 (3) and 1208 (4)
  or 1210 or 1610 or 1910H (5)
- ❒ Chemistry 1220 or 1620 or 1920H (5)
- ❒ _____Substitution

Organic Chemistry (Check 1 box)

- ❒ Chemistry 2310 (4)
  OR 2510 AND 2520 (8)
  OR 2510 AND 2540 (6)
- ❒ _____Substitution
- ❒ Waived

THE OHIO STATE UNIVERSITY

Biology Major Checklist
Bachelor of Arts
Life Science Education Specialization

Core Course (4-5 credit hours) – Required (Check 1 box)

- ❒ Biology 3401 (4) – *Integrated Biology*
- ❒ Biology 3501 (3) and 4901 (2)

Life Sciences Education Specialization (21-28 credit hours)

Required (Check 5 boxes)

- ❒ 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 (Check at least 2 boxes)

- ❒ EEOB 2220† (2) – *Biodiversity of Ohio: Birds*
- ❒ EEOB 2510† (3) or 2511† (4) – *Human Anatomy*
- ❒ EEOB 2520 (3) – *Human Physiology*
- ❒ EEOB 3320 (strongly recommended) † (3) – *Organismal Diversity*
- ❒ EEOB 3270 (3) - *Infectious Disease Ecology, Evolution, and Transmission*
- ❒ EEOB 3410 (4) - *Ecology*
- ❒ EEOB 3420 (4) – *Behavioral Ecology*
- ❒ EEOB 4210 (2) – *Ecology and Evolution: Vertebrates*
- ❒ EEOB 4220† (3) – *Ecology and Evolution: Mammals*
- ❒ EEOB 4230 (2) – *Ecology and Evolution: Invertebrates*
- ❒ EEOB 4240 (3) - *Ecology & Evolution of Plants & People*
- ❒ EEOB 5430† (3) – *Fish Ecology* OR EEOB 5930† (3) – *Ichthyology*
- ❒ Entomology 4000 (3) – *General Entomology Lecture*
- ❒ MolGen 4581S or 4591S or equiv. (1) – *DNA Fingerprinting Workshop with Columbus Public Schools*

Electives

_____ _____

_____ _____

Embedded Literacies (no additional credit hours)

❒ Advanced Writing	Biology 3401 or 3501
❒ Advanced Data Analytics	Biology 3401 or 3501
❒ Technology Literacy	Biology 3401 or 3501

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 and Biochemistry 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.

THE OHIO STATE UNIVERSITY

Biology Major Checklist
Bachelor of Arts
Pre-Health Professions Specialization

NAME_____ DATE_____
SEMESTER OF GRADUATION _____

General Education Requirements (32-39 credit hours)

- ❒ GE Launch Seminar (1) — GENED 1201
- ❒ Foundations: Writing and Information Literacy (3) — _____
- ❒ Foundations: Mathematics & Quantitative Reasoning / Data Analysis (3-5) — _____
- ❒ Foundations: Literacy, Visual & performing Arts (3) — _____
- ❒ Foundations: Historical & Cultural Studies (3) — _____
- ❒ Foundations: Natural Sciences (4-5) — _____
- ❒ Foundations: Social & Behavioral Sciences (3) — _____
- ❒ Foundations: Race, Ethnicity and Gender Diversity (3) — _____
- ❒ Theme: Citizenship for a Diverse & Just World (4-6) — _____
- ❒ Theme: Student Choice (4-6) — _____
- ❒ World Language (0-12) — _____
- ❒ GE Reflection (1) — GENED 4001

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

- ❒ Arts & Sciences Survey (1) — _____
- ❒ World Language (0-12) — _____

Required Supporting Courses (32-49 credit hours)

Biology (Check 2 boxes)

- ❒ Biology 1113.01 (4) or 1113.02 (5)*
  or Biology 1111 (3) and 1112 (4)*
- ❒ Biology 1114.01 (4) or 1114.02 (5)*
- ❒ _____Substitution

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

Mathematics/Statistics (Check 1 box)

- ❒ Math 1148 (4)** – *College Algebra* AND
  Math 1149 (3) – *Trigonometry*,
  OR Math 1148 (4) and Stat 1450 (3),
  OR Math 1120 (5) AND 1121 (5)
  OR Math 1150 (5) **– *Pre-Calculus*
- ❒ _____Substitution

** Can be used to fulfill the GEN Foundation: MQR/DA requirement

Physics (Check 1 box)

- ❒ Physics 1200 (alg) or 1250 (calc) (5)
  OR 1248 (4) AND 1249 (3)
- ❒ _____Substitution

Chemistry (Check 2 boxes)

- ❒ Chemistry 1206 (3) and 1208 (4)
  or 1210 or 1610 or 1910H (5)
- ❒ Chemistry 1220 or 1620 or 1920H (5)
- ❒ _____Substitution

Organic Chemistry (Check 1 box)

- ❒ Chemistry 2310 (4),
  OR 2510 AND 2520 (8)
  OR 2510 AND 2540 (6)
- ❒ _____Substitution
- ❒ Waived

† Courses within the major with a laboratory component

THE OHIO STATE UNIVERSITY

Biology Major Checklist
Bachelor of Arts
Pre-Health Professions Specialization

Core Course (4-5 credit hours) – Required (Check 1 box)

- ❒ Biology 3401 (4) – *Integrated Biology*
- ❒ Biology 3501 (3) and 4901 (2)

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

Required

- ❒ MolGen 4500 (3) or 4606 (4)

Additional Coursework (Check at least 4 boxes)

- ❒ 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) or 2511† (4) – *Human Anatomy*
- ❒ EEOB 4510† (3) – *Comparative Vertebrate Anatomy*
- ❒ Physio 3200 (5) or EEOB 2520 (3) – *Human Physiology* or EEOB 4520 (3) *Comparative Physiology*
- ❒ EEOB 3270 (3) or 3320 (3) or 3410 (4) or 3420 (4) or 4240 (3) – *Ecology*

Electives

_____ _____

_____ _____

Embedded Literacies (no additional credit hours)

❒ Advanced Writing	Biology 3401 or 3501
❒ Advanced Data Analytics	Biology 3401 or 3501
❒ Technology Literacy	Biology 3401 or 3501

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 and Biochemistry 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

THE OHIO STATE UNIVERSITY

Appendix C: Advising sheet for the Biology Minor

Biology Minor Checklist

NAME_____ DATE_____
SEMESTER OF GRADUATION _____

Required Supporting Courses (23-33 credit hours)

Biology (Check 2 boxes)

- ❒ Biology 1113.01 (4) OR 1113.02 (5) or Biology 1111 (3) and 1112 (4)
- ❒ Biology 1114.01 (4) OR 1114.02 (5)*
- ❒ _____Substitution

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

Mathematics/Statistics (Check 1 box)

- ❒ Math 1148 (4)** AND Math 1149 (3), OR Math 1148 (4)** AND STAT 1450 (3), OR Math 1150 (5)**
- ❒ _____Substitution

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

Chemistry (Check 2 boxes)

- ❒ Chemistry 1206 (3) AND 1208 (4), OR 1210, OR 1610, OR 1910H (5)
- ❒ Chemistry 1220, OR 1620, OR 1920H (5)
- ❒ _____Substitution

Core Course (3-4 credit hours) – Required (Check 1 box)

- ❒ Biology 3401 (4) – *Integrated Biology*
- ❒ Biology 3501 (3) – *Biological Skills*

Biology Minor (6-8 credit hours)

Additional Required Courses (Check 2 boxes)

- ❒ Biochem 4511 (4)
- ❒ EEOB 2510† (3) or 2511† (4) – *Human Anatomy*
- ❒ EEOB 2520 (3) – *Human Physiology*
- ❒ EEOB 3310 or 3310.01 or 3310.02† (4) – *Evolution*
- ❒ EEOB 3410 (4) – *Ecology*
- ❒ Micro 4000† or 4000.01† or 4000.02† (4)
- ❒ MolGen 4500 (3)

Electives

_____ _____

TOTAL BioSci HOURS		TOTAL SEMESTER UNITS	

Notes:

- Core, required, and elective courses must total at least 15 semester units.
- 15 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.
- Transfer credit is allowed - no more than six of the credit hours required on the major.
- Honors versions of courses substitute freely.