### DEPARTMENT OF BIOLOGY

**Requirements for B.S. concentrations**

**Name:** ____________________________

**I) Required Introductory courses**

Completion of below courses with a grade point of 2.0 or better*:

- BIOL 104 (4)
- BIOL 106 (4)
- CHEM 163/165 (3,1)
- CHEM 164/166 (3,1)

*or equivalent course credit (i.e., AP or IB), and must be completed before taking any upper-division biology course.

**II) Required B.S. related courses**

- MATH 142 (4)
- Statistics course (MATH 130 or BIOL 479) (3-4)

Select 4 of the following (16 credit hours):

- CHEM 342/344 (4)
- PHYS 131/132 (4)
- EAS 101/102 (4)
- CHEM 164/166 (3,1)

**NOTE:** Students interested in post-graduate studies (i.e. Medical, Graduate school etc…) are advised to take CHEM & PHYS

**III) Required Upper Division Biology courses (35 credit hours)**

**A. Biology Core Courses (9 credit hours)**

- BIOL 301: Evolution (3)
- BIOL 302: Biochem & MB (3)
- BIOL 303: Genetics (3)

**B. General Requirements for all BS tracks**

1. At least 3 **Structured Labs**; including 1 from the **CMDB group** and 1 from the **EEOB group** *(see reverse side).* Depending on the specific degree concentration, a third lab can be from either CMDB or EEOB and may also include Biol479:Biometry

2. At least one **Plant Course** *(see reverse side for list of plant courses)*

3. **One** of the following **Senior Inquiry options**: BIOL 480: Int. in Conservation, BIOL 481: Integrated Bioinfomatics Int., BIOL 482: Int. in Plant Science, BIOL 497: Library Project (1-3), BIOL 498: Adv Ind. Research (0-3), BIOL 489: Comp Exam (0), or a 500- 600-level BIOL course. **Note:** The Lab courses, Plant courses and Senior Inquiry credit hours **all** count toward the 35 upper division hours. Also, a total of 4 hrs of Indept Research (BIOL 496), Library Project (BIOL 497), and Adv Indep Research (498) can be counted toward the 35 upper division credits required for the BS degree, but these courses do **NOT** count as structured lab courses.

4. Participation in Departmental Mentoring and Assessment *(see reverse)*

**C. Concentration-specific Requirements**

<table>
<thead>
<tr>
<th>Biological Science</th>
<th>Cell Biology &amp; Physiology</th>
<th>Ecology, Evolutionary &amp; Conservation</th>
<th>Biological Chemistry &amp; Molecular Biology</th>
<th>Plant Science</th>
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<tr>
<td>304 Cell S&amp;F (3)</td>
<td>304 Cell S&amp;F (3)</td>
<td>475 Ecology (4)</td>
<td>304 Cell S&amp;F (3)</td>
<td>304 Cell S&amp;F (3)</td>
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<td>EEOB elective(s) (min 4 hrs)</td>
<td>Ecology Elective^1 (3+)</td>
<td>EEOB elective(s) (min 4 hrs)</td>
<td>CMDB lab (1+)</td>
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<td></td>
<td>454 Human Cell Physio (3)</td>
<td>Evolution Elective^2 (3+)</td>
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<td>326 Plants &amp; Fungi (4)</td>
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<td>1 Cell-related Lab:306 Cell Lab (1)</td>
<td>Organismal Elective^3 (3+)</td>
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<td>349 Plant Physio (3)</td>
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<td>405 Mol Tech (2)</td>
<td>Tools Elective^4 (2)</td>
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<td>409 Plant Ecology (3)</td>
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<td>465 Micro (2)</td>
<td>CMDB elective(s) (min 4 hrs)</td>
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<td>Electives up to 35, including Core &amp; General Reqs</td>
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<td>461 Devo lab (2)</td>
<td>(see reverse side for elective choices)</td>
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<td>Recommended: 482 Plant Internship (1)</td>
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<td>Electives up to 35, including Core &amp; General Reqs</td>
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2 Courses from:

- 342 Comp Anat (5)
- 344 Embryl (5)
- 348 Exer Phys (3)
- 349 PI Phys, 408 Adv Cell (3), 415 Nrv Cell Mech (3)
- 441 Comp An Phys (3), [1 of 450 Endcrn/451 Bev Endcrn (3)]
- 460 Devl (3), 463 Immuno (3), 464 Micro (3), 472 Cancer Bio (3)

Electives up to 35, including Core & General Reqs

2 Courses from:


Electives up to 35, including Core & General Reqs

Recommended: 481 Bioinfo Internship (1)

**Updated 3-19-14**
Cellular, Molecular, and Developmental Biology (CMDB)
(Structured Labs are in italics)

304 Mol Cell Biol II (3); 306 Cell Biology laboratory (1); 310 Experiments in Genetics (1); 342 Comparative Anatomy (5); 347 General Physiology Lab (2); 348 Exercise Physiology (3); 349 Plant Physiology (3); 405 Molecular Techniques Lab (2); 407 Advanced Biochem (3); 408 Advanced Cell (3); 415 Nerve Cell Mechanisms (3); 416 Microbial Ecology (4); 441 Comparative Animal Physiology (3); 444 Vertebrate Histology (4); 450 Endocrinology (3); 451 Behavioral Endocrinology (3); 454 Human Cellular Physiology I (3); 460 Developmental Biology (3); 461 Developmental Biology Lab (2); 463 Immunobiology (3); 464 General Microbiology (3); 465 General Microbiology Lab (2); 470 Molecular Biology (3); 481 Integrative Bioinformatics Internship (0-3).

Coming soon: 403 Genomics (3)

Plant Courses: (Structured Labs are in italics)

BIOL326 Plants & Fungi (4); 328 Ethnobotany (3); 349 Plant Physiology (3); 345 Economic Botany (3); 404 Pollination Biology (3); 409 Plant Ecology (3); 412 Field Botany (5); 421 Biology of Orchids (3); 433 Spring Flora of the Ozarks (4)

Departmental Mentoring and Assessment

Participation in BIOL 195 and BIOL 295, and meeting with your mentor when in residence is expected. Students who are not able to take 195 and 295 (i.e. transfer students, students not in residence) may take BIOL 395 to fulfill this requirement. All students are also expected to participate in senior exit surveys.

Ecology, Evolutionary and Organismal Biology (EEOB)
(Structured Labs are in italics)

326 Biol of Plants and Fungi (4); 328 Ethnobotany (3); 345 Economic Botany (3); 404 Pollination Biol (3); 409 Plant Ecology (3); 410 Natural History of the Vertebrates; 412 Field Botany (5); 413 Field Mammalogy (5); 414 Field Ornithology (5); 416 Microbial Ecology (4); 417 Intro to GIS; 418 Intermediate GIS; 419 GIS in Biology; 420 Aquatic Ecology (4); 421 Biology and Classification of Orchids (3); 426 Biol of Amphibians and Reptiles (4); 428 Biol of Fishes (4); 431 Biol of Birds (4); 432 Cave Biology (4); 433 Spring Flora of the Ozarks (4); 434 Systematic Biology (3); 435 Biol of Parasitic Organisms (4); 436 Animal Behavior (3); 437 Animal Behavior Lab (1); 438 Biol of Mammals (4); 440 Applied Ecology (3); 448 Conservation Biology (3); 458 Applied Population Genetics (3); 475 General Ecology (4); 480 Internship in Conservation (3); 482 Internship in Plant Science (3).

EEOB Concentration Electives

1Ecology Electives: 409 Plant Ecology (3); 414 Field Ornithology (5); 420 Aquatic Ecology (4); 436 Animal Behavior (3); 440 Applied Ecology (3); 445 Ecological Risk Assessment (3); 448 Conservation Biology (3); 467 Population Biology (3); 468 Landscape Ecology (3)

2Evolution Electives: 342 Comp Anat Vertebrates (5), 401 Sex, Evolution, Behavior (3); 404 Pollination Biol (3), 412 Field Botany (5); 434 Systematic Biology (3); 441 Comparative Animal Physiology (3); 458 Applied Population Genetics (3); 477 Coevolution (3)

3Organismal Elective: 322 Biol of Invertebrates (3); 326 Biol of Plants and Fungi (4); 328 Ethnobotany (3); 345 Economic Botany (3); 410 Natural History of the Vertebrates (4); 413 Field Mammalogy (5); 414 Field Ornithology (5); 421 Biology and Classification of Orchids (3); 426 Biol of Amphibians and Reptiles (4); 428 Biol of Fishes (4); 431 Biol of Birds (4); 433 Spring Flora of the Ozarks (4); 435 Biol of Parasitic Organisms (4); 438 Biol of Mammals (4); 441 Comparative Animal Physiology (3); 464 General Microbiology (3)

4Tools courses: 405 Molecular Techniques (2); 478 Molecular Phylogenetic Analysis (4); 416 Microbial Ecology (4); 417 Intro to GIS (3), 418 Intermediate GIS (3), 419 GIS in Biology (3)

In accordance with Arts and Sciences graduation requirements, a student must earn an overall 2.00 grade point average in major and minor or related courses that are approved for completion of their degree program.

Updated 3-19-14