### Department of Biology

**Requirements for the five B.S. tracks**

#### I) Degree-prerequisite courses
Completion of below courses with an average of 'C' 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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>MATH 142 (4)</td>
<td>Statistics course (MATH 130 or BIOL 479) (3-4)</td>
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<tr>
<td>CHEM 342/344 (4)</td>
<td>PHYS 131/133 (4)</td>
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<td>CHEM 343/345 (4)</td>
<td>EAS 101/102 (4)</td>
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**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: MCB I (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 track, a third lab can be from either CMDB or EEOB and may also include Bio479:Biometry. **Note:** A total of 4 hrs of Indep Study (BIOL 398) or Adv Indep Study (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.

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

3. **One of the following Senior Inquiry options:**
   - BIOL 484 Library Project (1-3)
   - BIOL 485 Grad-level Bio (1-4)
   - BIOL 488 Research Project (1-3)
   - BIOL 489: Comp Exam (0)

**Note:** The Labs, Plant course and Senior Inquiry credit hours all count toward the 35 upper division hours

**C. Track-specific Requirements**

**Biological Science**
- 304 MCBII (3)
- EEOB elective(s) (min 4 hrs) OR 346 Gen Physio (3)
- EEOB elective(s) (min 4 hrs) OR 454 Human Cell Physio (3)

E lectives up to 35, including Core & General Reqs.

**Cell Biology & Physiology**
- 304 MCBII (3)
- EEOB elective(s) (min 4 hrs) OR 346 Gen Physio (3)
- EEOB elective(s) (min 4 hrs) OR 454 Human Cell Physio (3)

1 Cell-related Lab: 306 Cell Lab (2)
- 405 Mol Tech (2)
- 465 Micro (2)
- 461 Devo lab (2)

1 Physio-relate Lab: 342 Comp Anat (5)
- 344 Embryo (5)
- 347 Physio lab (2)
- 444 Histology (4)

2 Courses from:

Electives up to 35, including Core & General Reqs

**Ecology, Evolutionary & Organismal Biology**
- 475 Ecology (3)
- Ecology Elective¹ (3/4)
- Evolution Elective² (3-5)
- Organismal Elective³ (3)
- Tools Elective⁴ (3)

Electives up to 35, including Core & General Reqs

**Molecular Biology**
- 304 MCBII (3)
- EEOB elective(s) (min 4 hrs) OR 470 Mol Bio (3)
- 407 Adv Biochem (3) OR 408 Adv Cell (3)

2 Labs from:
- 306 Cell Lab (2)
- 310 Gen Lab (2)
- 405 Mol Tech (2)
- 465 Micro (2)

**Plant Science**
- 304 MCBII (3)
- 326 Plants & Fungi (4)
- 349 Plant Physio (3)
- 409 Plant Ecology (3)
- 482 Plant Internship (1)

Electives up to 35, including Core & General Reqs

2 Courses from:

Electives up to 35, including Core & General Reqs

Electives up to 35, including Core & General Reqs

**Notes:**
- Updated 9-20-11
Cellular, Molecular, and Developmental Biology (CMDB)
(Structured Labs are in italics)

304 Mol Cell Biol II (3); 306 Cell Biology laboratory (2); 310 Experiments in Genetics (2); 342 Comparative Anatomy (5); 344 Embryology (5); 347 General Physiology Lab (2); 349 Plant Physiology (3); 402 Vertebrate Reproductive Physiology (3); 405 Molecular Techniques Lab (2); 407 Advanced Biochem (3), 408 Advanced Cell (3), 415 Nerve Cell Mechanisms (3); 441 Comparative Animal Physiology (3); 444 Vertebrate Histology (4); 446 Exercise Physiology (3); 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).

Plant Courses: (Structured Labs are in italics)

BIOI326 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)

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

322 Biol of Invertebrates (3); 326 Biol of Plants and Fungi (4); 328 Ethnobotany (3); 345 Economic Botany (3); 401 Sex, Evolution, Behavior (3); 404 Pollination Biol (3); 409 Plant Ecology (3); 410 Natural History of the Vertebrates; 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); 434 Systematic Biology (3); 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); 445 Ecological Risk Assessment (3); 448 Conservation Biology (3); 467 Population Biology (3); 468 Landscape Ecology (3); 458 Applied Population Genetics (3); 475 General Ecology (3); 480 Internship in Conservation (3); 482 Internship in Plant Science (3); 412 Field Botany (5); 413 Field Mammalogy (5); 414 Field Ornithology (5)

EEOB Track Electives

1Ecology Electives: 409 Plant Ecology (3); 420 Aquatic Ecology (4); 436 Animal Behavior (3); 440 Applied Ecology (3); 454 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 Filed 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); 464 General Microbiology (3)

4Tools courses: 405 Molecular Techniques (2) [note: 3 credit hours are required to fulfill the tools requirement]; 478 Molecular Phylogenetic Analysis (4); 417 Intro to GIS (3), 418 Intermediate GIS (3), 419 GIS in Biology (3)