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 343/345 (4) _____PHYS 133/134 (4) _____EAS 103/104 (4)

***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

Check Off

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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

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

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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- or 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 Indept 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..*

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

C. Concentration-specific Requirements

Biological Science

____ 304 Cell S&F (3)

____ CMBD elective(s) (min 4 hrs)

____ EEOB elective(s) (min 4 hrs)

Electives up to 35, including Core & General Reqs.

Cell Biology & Physiology

____ 304 Cell S&F (3)

____ EEOB elective(s) (min 4 hrs)

____ 454 Human Cell Physio (3)

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

1 Physio-relateLab:342 Comp Anat (5)
347 Physio lab (2)
444 Histology (4)

2 Courses from:
342 Comp Anat (5), 344 Embryl (5), 348 Exer Phys (3), 349 Pl 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

Ecology, Evolutionary & Conservation

____ 475 Ecology (4)

____ Ecology Elective[1] (3+)

____ Evolution Elective[2] (3+)

____ Organismal Elective[3] (3+)

____ Tools Elective[4] (2)

____ CMBD elective(s) (min 4 hrs)

(see reverse side for elective choices)

Electives up to 35, including Core & General Reqs

Biological Chemistry & Molecular Biology

____ 304 Cell S&F (3)

____ EEOB elective(s) (min 4 hrs)

2 Courses from:
470 Mol Bio (3)
407 Adv Biochem (3)
403 Genomics (3)

2 Labs from:
306 Cell Lab (**1**)
310 Gen Lab (**1**)
405 Mol Tech (2)
416 Micro Eco (4)
465 Micro (2)

Electives up to 35, including Core & General Reqs

Recommended: ____481 Bioinfo Internship (1)

Plant Science

____ 304 Cell S&F (3)

____ CMBD lab (1+)

____ 326 Plants & Fungi (4)

____ 349 Plant Physio (3)

____ 409 Plant Ecology (3)

Electives up to 35, including Core & General Reqs

Recommended: ____ 482 Plant Internship (1)

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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 (EE0B)

(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

[1] *Ecology 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)

[2] *Evolution 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)

[3] *Organismal Elective*: 322 Biol of Invertebrates (3); *326 Biol of Plants and Fungi* (4); 328 Enthobotany (3), 345 Economic Botany (3), *410 Natural History of the Vertebrates* (4); *413 Field Mammology* (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)

[4] *Tools 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 a major and minor or related courses that are approved for completion of their degree program

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