

BIOLOGY: EVOLUTIONARY BIOLOGY

REQUIREMENTS

REQUIREMENTS FOR THE NAMED OPTION

Students must complete a minimum of 31 credits of Biological Science courses within the Introductory Biology, Foundation Course, Upper-Level Breadth in the Major, Additional Lab or Field Research, and Evolutionary Biology Seminar requirements. Unless specifically stated otherwise, courses may not be used to meet multiple requirements of the major.

CORE REQUIREMENTS

Mathematics and Statistics

| Code | Title | Credits |
|--------------------------------|--|---------|
| Complete one of the following: | | 4-10 |
| MATH 221 | Calculus and Analytic Geometry 1 | |
| MATH 211 | Survey of Calculus | |
| MATH 171 & MATH 217 | Calculus with Algebra and Trigonometry I and Calculus with Algebra and Trigonometry II | |
| Complete one of the following: | | 3-4 |
| STAT 240 | Data Science Modeling I | |
| STAT 301 | Introduction to Statistical Methods | |
| STAT 371 | Introductory Applied Statistics for the Life Sciences | |

Total Credits 7-14

Chemistry

| Code | Title | Credits |
|--|--|---------|
| General Chemistry (Complete one of the following): | | 5-10 |
| CHEM 103 & CHEM 104 | General Chemistry I and General Chemistry II | |
| CHEM 109 | Advanced General Chemistry | |
| CHEM 115 & CHEM 116 | Chemical Principles I and Chemical Principles II | |
| Organic Chemistry | | |
| CHEM 343 | Organic Chemistry I | 3 |
| CHEM 344 | Introductory Organic Chemistry Laboratory | 2 |
| CHEM 345 | Organic Chemistry II | 3 |

Total Credits 13-18

Physics

| Code | Title | Credits |
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| First Semester Physics (complete one of the following): | | 4-5 |
| PHYSICS 103 | General Physics | |
| PHYSICS 201 | General Physics | |

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| PHYSICS 207 | General Physics | |
| Second Semester Physics (complete one of the following): | | 4-5 |
| PHYSICS 104 | General Physics | |
| PHYSICS 202 | General Physics | |
| PHYSICS 208 | General Physics | |
| Total Credits | | 8-10 |

Introductory Biology

| Code | Title | Credits |
|------------------------------------|---|---------|
| Complete one sequence: | | 10-13 |
| Option A: | | 10 |
| BIOLOGY/ BOTANY/ ZOOLOGY 151 | Introductory Biology | |
| BIOLOGY/ BOTANY/ ZOOLOGY 152 | Introductory Biology | |
| Option B: | | 13 |
| BIOCORE 381 | Evolution, Ecology, and Genetics | |
| BIOCORE 382 | Evolution, Ecology, and Genetics Laboratory | |
| BIOCORE 383 | Cellular Biology | |
| BIOCORE 384 | Cellular Biology Laboratory | |
| BIOCORE 485 | Principles of Physiology | |
| Option C: | | 10 |
| ZOOLOGY/ BIOLOGY 101 | Animal Biology | |
| ZOOLOGY/ BIOLOGY 102 | Animal Biology Laboratory | |
| BOTANY/ BIOLOGY 130 | General Botany | |

Foundation Course (complete one of the following):

Students may use BIOCORE 381 and BIOCORE 383 toward both Introductory Biology and Foundation.

| Code | Title | Credits |
|---------------------------|---|---------|
| BIOCORE 381 & BIOCORE 383 | Evolution, Ecology, and Genetics and Cellular Biology | 6 |
| GENETICS 466 | Principles of Genetics | 3 |
| GENETICS 468 | General Genetics 2 | 3 |

UPPER-LEVEL BREADTH IN THE MAJOR

Minimum of 13 credits required as follows and must include **one approved lab course**. (Approved lab courses are indicated by footnote). A course taken to meet the Foundation requirement may not also count as Upper-Level Breadth in the Major.

- Complete the Evolutionary Biology course
- Complete at least two credits from either category A or B.
- Complete at least two credits from category C.
- Complete at least two credits from category D.
- Additional courses needed to reach 13 credits Upper-Level Breadth in the Major may be taken from any category (A, B, C, D, E).

Required Evolutionary Biology Course

| Code | Title | Credits |
|-----------------------------------|----------------------|---------|
| ZOOLOGY/ ANTHRO/ BOTANY 410 | Evolutionary Biology | 3 |

A. Cellular and Subcellular Biology

| Code | Title | Credits |
|---------------------------------------|---|---------|
| AGRONOMY/ HORT 338 | Plant Breeding and Biotechnology | 3 |
| AGRONOMY/ BOTANY/HORT 339 | Plant Biotechnology: Principles and Techniques I ¹ | 4 |
| AGRONOMY/ BOTANY/HORT 340 | Plant Cell Culture and Genetic Engineering | 3 |
| AN SCI 336 | Animal Growth and Development | 3 |
| AN SCI/DY SCI 362 | Veterinary Genetics | 2 |
| AN SCI 366 | Concepts in Genomics | 3 |
| BIOCHEM 501 | Introduction to Biochemistry | 3 |
| BIOCHEM 507 | General Biochemistry I | 3 |
| BIOCHEM 508 | General Biochemistry II | 3-4 |
| BIOCHEM/ NUTR SCI 510 | Nutritional Biochemistry and Metabolism | 3 |
| BIOCHEM 570 | Computational Modeling of Biological Systems | 3 |
| BIOCHEM/ NUTR SCI 560 | Principles of Human Disease and Biotechnology | 2 |
| BIOCHEM/ M M & I 575 | Biology of Viruses | 2 |
| BIOCHEM 601 | Protein and Enzyme Structure and Function | 2 |
| BIOCHEM/ GENETICS/ MICROBIO 612 | Prokaryotic Molecular Biology | 3 |
| BIOCHEM/ GENETICS/ MD GENET 620 | Eukaryotic Molecular Biology | 3 |
| BIOCHEM/ BOTANY 621 | Plant Biochemistry | 3 |
| BIOCHEM 625 | Mechanisms of Action of Vitamins and Minerals | 2 |
| BMOLCHEM/ MICROBIO 668 | Microbiology at Atomic Resolution | 3 |
| BOTANY/ENTOM/ PL PATH 505 | Plant-Microbe Interactions: Molecular and Ecological Aspects | 3 |
| CRB 640 | Fundamentals of Stem Cell and Regenerative Biology | 3 |
| CRB 650 | Molecular and Cellular Organogenesis | 3 |
| CRB/B M E 670 | Biology of Heart Disease and Regeneration | 3 |
| DERM 601 | Skin Biology and Skin Diseases | 3 |
| GENETICS 466 | Principles of Genetics | 3 |
| GENETICS 467 | General Genetics I | 3 |
| GENETICS 520 | Neurogenetics | 3 |
| GENETICS 527 | Developmental Genetics for Conservation and Regeneration | 3 |

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| GENETICS 588 | Immunogenetics | 3 |
| GENETICS 627 | Animal Developmental Genetics | 3 |
| GENETICS/ MD GENET 662 | Cancer Genetics | 3 |
| H ONCOL/ MED PHYS 410 | Radiobiology | 2-3 |
| MICROBIO 345 | Introduction to Disease Biology | 3 |
| MICROBIO 470 | Microbial Genetics & Molecular Machines | 3 |
| MICROBIO/ SOIL SCI 523 | Soil Microbiology and Biochemistry | 3 |
| MICROBIO 607 | Advanced Microbial Genetics | 3 |
| MICROBIO 626 | Microbial and Cellular Metabolomics | 3 |
| M M & I 341 | Immunology | 3 |
| M M & I/PATH- BIO 528 | Immunology | 3 |
| NEURODPT/ ZOOLOGY 616 | Lab Course in Neurobiology and Behavior ¹ | 4 |
| NTP/ NEURODPT 610 | Cellular and Molecular Neuroscience | 4 |
| NTP/ NEURODPT 629 | Molecular and Cellular Mechanisms of Memory | 3 |
| NTP 675 | Special Topics (Stem Cell in Neurobiology) | 1-3 |
| NTP 675 | Special Topics (Reproductive Neuroendocrinology) | 1-3 |
| NTP 675 | Special Topics (Molecular Mechanisms of Brain Damage) | 1-3 |
| ONCOLOGY/ M M & I/ PL PATH 640 | General Virology-Multiplication of Viruses | 3 |
| PHM SCI 254 | Tiny Earth Genomics - Researching Uncultured Antibiotic-Producing Microbes ¹ | 3 |
| PHM SCI 558 | Laboratory Techniques in Pharmacology and Toxicology ¹ | 2 |
| ZOOLOGY 370 | General Molecular Biology | 3 |
| ZOOLOGY 444 | Neuronal Cell Biology in Health and Disease | 2 |
| ZOOLOGY 470 | Introduction to Animal Development | 3 |
| ZOOLOGY/ PSYCH 523 | Neurobiology | 3 |
| ZOOLOGY 555 | Laboratory in Developmental Biology ¹ | 3 |
| ZOOLOGY 570 | Cell Biology | 3 |
| ZOOLOGY 604 | Computer-based Gene and Disease/Disorder Research Lab ¹ | 2 |
| ZOOLOGY 625 | Development of the Nervous System | 2 |
| ZOOLOGY 655 | Modeling Neurodevelopmental Disease | 3 |

B. Organismal Biology

| Code | Title | Credits |
|--|---|---------|
| AN SCI/DY SCI 373 | Animal Physiology | 3 |
| AN SCI 377 | Integrative Animal Physiology Laboratory ¹ | 1 |
| AN SCI/DY SCI 434 | Reproductive Physiology ¹ | 3 |
| AN SCI/F&W ECOL/ ZOOLOGY 520 | Ornithology | 3 |
| AN SCI/F&W ECOL/ ZOOLOGY 521 | Birds of Southern Wisconsin ¹ | 3 |
| ANAT&PHY 335 | Physiology ¹ | 5 |
| ANAT&PHY 337 | Human Anatomy | 3 |
| ANAT&PHY 338 | Human Anatomy Laboratory | 2 |
| ANAT&PHY 435 | Fundamentals of Human Physiology ¹ | 5 |
| ANTHRO/ NTP/PSYCH/ ZOOLOGY 619 | Biology of Mind | 3 |
| BIOCORE 486 | Principles of Physiology Laboratory ¹ | 2 |
| BOTANY 300 | Plant Anatomy ¹ | 4 |
| BOTANY 330 | Algae ¹ | 3 |
| BOTANY/ PL PATH 332 | Fungi ¹ | 4 |
| BOTANY/ PL PATH 333 | Biology of the Fungi | 2 |
| BOTANY/ F&W ECOL 402 | Dendrology: Woody Plant Identification and Ecology ¹ | 3 |
| BOTANY 500 | Plant Physiology ¹ | 3-4 |
| CS&D 503 | Neural Mechanisms of Speech, Hearing and Language | 3 |
| DY SCI 378 | Lactation Physiology ¹ | 3 |
| ENTOM/ ZOOLOGY 302 | Introduction to Entomology ¹ | 4 |
| ENTOM 321 | Physiology of Insects | 3 |
| ENTOM 331 | Taxonomy of Mature Insects ¹ | 4 |
| F&W ECOL 401 | Physiological Animal Ecology | 3 |
| GENETICS 545 | Genetics Laboratory ¹ | 2 |
| GENETICS/ MD GENET 565 | Human Genetics | 3 |
| GEOSCI/ ZOOLOGY 542 | Invertebrate Paleontology | 3 |
| KINES 314 | Physiology of Exercise ¹ | 4 |
| MICROBIO 303 | Biology of Microorganisms | 3 |
| MICROBIO 304 | Biology of Microorganisms Laboratory ¹ | 2 |
| MICROBIO 330 | Host-Parasite Interactions | 3 |
| MICROBIO 526 | Physiology of Microorganisms | 3 |
| M M & I 301 | Pathogenic Bacteriology | 2 |
| M M & I/ENTOM/ PATH-BIO/ ZOOLOGY 350 | Parasitology | 3 |
| NTP/NEURODPT/ PSYCH 611 | Systems Neuroscience | 4 |
| NTP/ZOOLOGY 620 | Neuroethology Seminar | 2 |

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| NTP 675 | Special Topics (Functional Brain Imaging of Cognitive Disorders) | 1-3 |
| NUTR SCI 431 | Nutrition in the Life Span | 3 |
| NUTR SCI 631 | Clinical Nutrition I | 3 |
| ONCOLOGY 401 | Introduction to Experimental Oncology | 2 |
| PATH 404 | Pathophysiologic Principles of Human Diseases | 3 |
| PL PATH 558 | Biology of Plant Pathogens ¹ | 3 |
| PSYCH 406 | Psychology of Perception | 3-4 |
| PSYCH 414 | Cognitive Psychology | 3 |
| PSYCH 454 | Behavioral Neuroscience | 3 |
| PSYCH 513 | Hormones, Brain, and Behavior | 4 |
| PSYCH 606 | Hormones and Behavior | 3 |
| ZOOLOGY 303 | Aquatic Invertebrate Biology | 3 |
| ZOOLOGY 430 | Comparative Anatomy of Vertebrates ¹ | 5 |
| ZOOLOGY 603 | Endocrinology | 3-4 |
| ZOOLOGY 611 | Comparative and Evolutionary Physiology | 3 |
| ZOOLOGY 612 | Comparative Physiology Laboratory ¹ | 2 |

C. Ecology

| Code | Title | Credits |
|--|---|---------|
| AGRONOMY/ BOTANY/ SOIL SCI 370 | Grassland Ecology | 3 |
| AGRONOMY/ ENTOM/F&W ECOL/ M&ENVTOX 632 | Ecotoxicology: The Chemical Players | 1 |
| AGRONOMY/ ENTOM/F&W ECOL/ M&ENVTOX 633 | Ecotoxicology: Impacts on Individuals | 1 |
| AGRONOMY/ ENTOM/F&W ECOL/ M&ENVTOX 634 | Ecotoxicology: Impacts on Populations, Communities and Ecosystems | 1 |
| AN SCI 420 | Microbiomes of Animal Systems | 3 |
| BOTANY/ ZOOLOGY 450 | Midwestern Ecological Issues: A Case Study Approach | 2 |
| BOTANY/ F&W ECOL 455 | The Vegetation of Wisconsin ¹ | 4 |
| BOTANY/ F&W ECOL/ ZOOLOGY 460 | General Ecology ¹ | 4 |
| BOTANY/ENTOM/ ZOOLOGY 473 | Plant-Insect Interactions | 3 |
| BOTANY/ENVIR ST/ F&W ECOL/ ZOOLOGY 651 | Conservation Biology | 3 |
| ENTOM 450 | Basic and Applied Insect Ecology | 3 |
| ENTOM 451 | Basic and Applied Insect Ecology Laboratory | 1 |
| ENTOM 490 | Biodiversity and Global Change | 3 |
| ENVIR ST/ LAND ARC 361 | Wetlands Ecology | 3 |

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| F&W ECOL 448 | Disturbance Ecology | 3 |
| F&W ECOL 550 | Forest Ecology | 3 |
| F&W ECOL/ LAND ARC/ ZOOLOGY 565 | Principles of Landscape Ecology | 2 |
| F&W ECOL/ ZOOLOGY 660 | Climate Change Ecology | 3 |
| GENETICS 528 | Banking Animal Biodiversity: International Field Study in Costa Rica | 1 |
| MICROBIO/AN SCI/ BOTANY 335 | The Microbiome of Plants, Animals, and Humans | 3 |
| PL PATH 300 | Introduction to Plant Pathology ¹ | 4 |
| PL PATH 315 | Plant Microbiomes ¹ | 4 |
| ZOOLOGY 304 | Marine Biology | 2 |
| ZOOLOGY/ ENVIR ST 315 | Limnology-Conservation of Aquatic Resources | 2 |
| ZOOLOGY 316 | Laboratory for Limnology- Conservation of Aquatic Resources ¹ | 2-3 |
| ZOOLOGY 320 | Field Marine Biology ¹ | 3 |
| ZOOLOGY 504 | Modeling Animal Landscapes | 3-5 |
| ZOOLOGY/ ENVIR ST 510 | Ecology of Fishes | 3 |
| ZOOLOGY/ ENVIR ST 511 | Ecology of Fishes Lab ¹ | 2 |

D. Evolution and Systematics

| Code | Title | Credits |
|---------------------------------------|---|---------|
| ANTHRO 302 | Hominoid Evolution | 3 |
| ANTHRO 304 | Heredity, Environment and Human Populations | 3 |
| ANTHRO 411 | The Evolution of the Genus, Homo | 3 |
| ANTHRO 458 | Primate Behavioral Ecology | 3 |
| ANTHRO 603 | Seminar in Evolutionary Theory | 3 |
| BOTANY 305 | Plant Morphology and Evolution ¹ | 4 |
| BOTANY 400 | Plant Systematics ¹ | 4 |
| BOTANY 401 | Vascular Flora of Wisconsin ¹ | 4 |
| BOTANY 422 | Plant Geography | 3 |
| BOTANY/ PL PATH 563 | Phylogenetic Analysis of Molecular Data | 3 |
| ENTOM 432 | Taxonomy and Bionomics of Immature Insects ¹ | 4 |
| ENTOM/GENETICS/ ZOOLOGY 624 | Molecular Ecology | 3 |
| ENVIR ST/ F&W ECOL/ ZOOLOGY 360 | Extinction of Species | 3 |
| GENETICS 468 | General Genetics 2 | 3 |
| GEOSCI/ ZOOLOGY 541 | Paleobiology | 3 |
| MICROBIO 450 | Diversity, Ecology and Evolution of Microorganisms | 3 |
| MICROBIO 520 | Planetary Microbiology: What Life Here Tells Us About Life Out There | 3 |

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| MICROBIO 525 | Field Studies of Planetary Microbiology and Life in the Universe ¹ | 3 |
| PSYCH 449 | Animal Behavior | 3-4 |
| PSYCH 450 | Primate Psychology: Insights into Human Behavior | 3 |
| ZOOLOGY 300 | Invertebrate Biology and Evolution | 3 |
| ZOOLOGY 301 | Invertebrate Biology and Evolution Lab ¹ | 2 |
| ZOOLOGY 415 | Genetics of Human History | 3 |
| ZOOLOGY 425 | Behavioral Ecology | 3 |

E. Applied Biology, Agriculture and Natural Resources

| Code | Title | Credits |
|---------------------------------------|--|---------|
| A A E/AGRONOMY/ NUTR SCI 350 | World Hunger and Malnutrition | 3 |
| AGRONOMY 300 | Cropping Systems | 3 |
| AGRONOMY 302 | Forage Management and Utilization | 3 |
| AGRONOMY/ HORT 360 | Genetically Modified Crops: Science, Regulation & Controversy | 2 |
| AGRONOMY 377 | Global Food Production and Health | 3 |
| AGRONOMY/ DY SCI 471 | Food Production Systems and Sustainability | 3 |
| AGRONOMY/ HORT 501 | Principles of Plant Breeding | 3 |
| AGRONOMY/ ATM OCN/ SOIL SCI 532 | Environmental Biophysics | 3 |
| AMER IND/ ANTHRO/ BOTANY 474 | Ethnobotany | 3-4 |
| AN SCI/DY SCI/ NUTR SCI 311 | Comparative Animal Nutrition | 3 |
| AN SCI/DY SCI 320 | Animal Health and Disease | 3 |
| AN SCI/DY SCI 361 | Introduction to Animal and Veterinary Genetics | 2 |
| AN SCI/DY SCI 363 | Principles of Animal Breeding | 2 |
| AN SCI 503 | Avian Physiology ¹ | 3 |
| AN SCI 512 | Management for Avian Health ¹ | 3 |
| BIOCORE 587 | Biological Interactions | 3 |
| BOTANY 403 | Field Collections and Identification | 1-4 |
| ENTOM 351 | Principles of Economic Entomology | 3 |
| ENTOM/ ZOOLOGY 371 | Medical Entomology ¹ | 3 |
| ENTOM/ F&W ECOL 500 | Insects in Forest Ecosystem Function and Management | 2 |
| ENVIR ST/ POP HLTH 471 | Introduction to Environmental Health | 3 |
| ENVIR ST/ POP HLTH 502 | Air Pollution and Human Health | 3 |
| ENVIR ST/ LAND ARC 581 | Prescribed Fire: Ecology and Implementation ¹ | 3 |
| F&W ECOL 306 | Terrestrial Vertebrates: Life History and Ecology ¹ | 4 |
| F&W ECOL/ ZOOLOGY 335 | Human/Animal Relationships: Biological and Philosophical Issues | 3 |

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| F&W ECOL 410 | Principles of Silviculture | 3 |
| F&W ECOL 415 | Tree Physiology | 3 |
| F&W ECOL 458 | Environmental Data Science | 3 |
| F&W ECOL/ SURG SCI 548 | Diseases of Wildlife | 3 |
| F&W ECOL 561 | Wildlife Management Techniques ¹ | 3 |
| FOOD SCI/ MICROBIO 324 | Food Microbiology Laboratory ¹ | 2 |
| FOOD SCI/ MICROBIO 325 | Food Microbiology | 3 |
| FOOD SCI 532 | Integrated Food Manufacturing ¹ | 4 |
| GENETICS 548 | The Genomic Revolution | 3 |
| GENETICS/ HORT 550 | Molecular Approaches for Potential Crop Improvement | 3 |
| HORT/ LAND ARC 263 | Landscape Plants I ¹ | 3 |
| HORT 370 | World Vegetable Crops | 3 |
| HORT/ AGRONOMY 376 | Tropical Horticultural Systems | 2 |
| HORT 378 | Tropical Horticultural Systems International Field Study | 2 |
| M M & I 554 | Emerging Infectious Diseases and Bioterrorism | 2 |
| MED PHYS/ PHYSICS 265 | Introduction to Medical Physics | 2 |
| MED PHYS/NTP 651 | Methods for Neuroimaging Research | 3 |
| MICROBIO 357 | General Bioinformatics for Microbiologists | 3 |
| MICROBIO/ SOIL SCI 425 | Environmental Microbiology | 3 |
| NUTR SCI 332 | Human Nutritional Needs | 3 |
| PHM SCI/ M&ENVTOX/ ONCOLOGY/ PHM COL-M/ POP HLTH 625 | Toxicology I | 3 |
| PL PATH/ SOIL SCI 323 | Soil Biology | 3 |
| PL PATH 517 | Plant Disease Resistance | 2-3 |
| SOIL SCI 321 | Soils and Environmental Chemistry | 3 |

ADDITIONAL LAB OR FIELD RESEARCH

In addition to the Lab requirement, complete one of the following requirements:

- Complete one *additional* lab course from categories A–E in the [Upper-Level Breadth in the Major](#) course lists, **or**
- Complete at least 2 credits of directed study in a biological science discipline, or
- Complete a two-semester thesis in biological science.

Approved Directed Study Courses

To have Directed Study count for the Additional Lab/Field Research requirement students must first complete an Introductory Biology course.

| Code | Title | Credits |
|---------------|--|---------|
| AGRONOMY 699 | Special Problems | |
| ANATOMY 699 | Independent Study | |
| ANESTHES 699 | Independent Study | |
| AN SCI 699 | Special Problems | |
| BIOCHEM 699 | Special Problems | |
| BIOLOGY 699 | Directed Studies | |
| BOTANY 699 | Directed Study | |
| BMOLCHEM 699 | Special Research Problems | |
| COMP BIO 699 | Directed Study | |
| CRB 699 | Independent Study | |
| DY SCI 699 | Special Problems | |
| ENTOM 699 | Special Problems | |
| FAM MED 699 | Directed Study | |
| FOOD SCI 699 | Special Problems | |
| F&W ECOL 699 | Special Problems | |
| GENETICS 699 | Special Problems | |
| HORT 699 | Special Problems | |
| M&ENVTOX 699 | Special Problems | |
| MEDICINE 699 | Independent Study | |
| MED SC-V 699 | Directed Study | |
| MICROBIO 699 | Special Problems | |
| M M & I 699 | Directed Study | |
| MOL BIOL 699 | Directed Studies in Molecular Biology | |
| NEURODPT 699 | Directed Study | |
| NEUROL 699 | Directed Research in Neurology | |
| NEURSURG 699 | Neurosurgery: Directed in Study in Research | |
| NURSING 699 | Directed Study in Nursing | |
| NUTR SCI 699 | Special Problems | |
| OBS&GYN 699 | Directed Study | |
| ONCOLOGY 699 | Special Research Problems | |
| OPHTHALM 699 | Directed Study | |
| PATH 699 | Independent Study | |
| PATH-BIO 699 | Directed Study | |
| PEDIAT 699 | Independent Study | |
| PHM SCI 699 | Advanced Independent Study | |
| PHM COL-M 699 | Independent Study | |
| PHYSIOL 699 | Independent Work | |
| PL PATH 699 | Special Problems | |
| RHAB MED 699 | Independent Study | |
| SOIL SCI 699 | Special Problems | |
| SURG SCI 699 | Directed Study | |
| SURGERY 699 | Independent Study | |

Approved Thesis Sequences

| Code | Title | Credits |
|--------------------------------|--|---------|
| AGRONOMY 681 & AGRONOMY 682 | Senior Honors Thesis and Senior Honors Thesis | |
| AN SCI 681 & AN SCI 682 | Senior Honor Thesis and Senior Honors Thesis | |

Approved Thesis sequences:

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|--------------------------------|--|
| AN SCI 691 & AN SCI 692 | Thesis and Thesis |
| BIOCHEM 681 & BIOCHEM 682 | Senior Honors Thesis and Senior Honors Thesis |
| BIOCHEM 691 & BIOCHEM 692 | Senior Thesis and Senior Thesis |
| BIOLOGY 681 & BIOLOGY 682 | Senior Honors Thesis and Senior Honors Thesis |
| BIOLOGY 691 & BIOLOGY 692 | Senior Thesis and Senior Thesis |
| BOTANY 681 & BOTANY 682 | Senior Honors Thesis and Senior Honors Thesis |
| BOTANY 691 & BOTANY 692 | Senior Thesis and Senior Thesis |
| DY SCI 681 & DY SCI 682 | Senior Honors Thesis and Senior Honors Thesis |
| ENTOM 681 & ENTOM 682 | Senior Honors Thesis and Senior Honors Thesis |
| FOOD SCI 681 & FOOD SCI 682 | Senior Honors Thesis and Senior Honors Thesis |
| F&W ECOL 681 & F&W ECOL 682 | Senior Honors Thesis and Senior Honors Thesis |
| F&W ECOL 691 & F&W ECOL 692 | Senior Thesis and Senior Thesis |
| GENETICS 681 & GENETICS 682 | Senior Honors Thesis and Senior Honors Thesis |
| H ONCOL 681 & H ONCOL 682 | Senior Honors Thesis in Human Oncology 1 and Senior Honors Thesis in Human Oncology 2 |
| H ONCOL 691 & H ONCOL 692 | Senior Thesis in Human Oncology 1 and Senior Thesis in Human Oncology 2 |
| HORT 681 & HORT 682 | Senior Honors Thesis and Senior Honors Thesis |
| M M & I 691 & M M & I 692 | First Semester Senior Thesis and Second Semester Senior Thesis |
| MICROBIO 681 & MICROBIO 682 | Senior Honors Thesis and Senior Honors Thesis |
| MICROBIO 691 & MICROBIO 692 | Senior Thesis and Senior Thesis |
| MOL BIOL 681 & MOL BIOL 682 | Senior Honors Thesis and Senior Honors Thesis |
| MOL BIOL 691 & MOL BIOL 692 | Senior Thesis and Senior Thesis |
| NUTR SCI 681 & NUTR SCI 682 | Senior Honors Thesis and Senior Honors Thesis |
| NUTR SCI 691 & NUTR SCI 692 | Senior Thesis-Nutrition and Senior Thesis |
| PATH-BIO 681 & PATH-BIO 682 | Senior Honors Thesis I and Senior Honors Thesis II |
| PL PATH 681 & PL PATH 682 | Senior Honors Thesis and Senior Honors Thesis |
| SOIL SCI 681 & SOIL SCI 682 | Senior Honors Thesis and Senior Honors Thesis |

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| ZOOLOGY 681 & ZOOLOGY 682 | Senior Honors Thesis and Senior Honors Thesis |
| ZOOLOGY 691 & ZOOLOGY 692 | Senior Thesis and Senior Thesis |

EVOLUTIONARY BIOLOGY SEMINAR

| Code | Title | Credits |
|--------------------------|---------------------------------------|---------|
| BIOLOGY/ GENETICS 522 | Communicating Evolutionary Biology | 2-3 |

RESIDENCE AND QUALITY OF WORK

- 2.000 GPA in all BIOLOGY and major courses
- 2.000 GPA on at least 15 credits of Upper-Level work in the major, in Residence²
- 15 credits in the major, taken on the UW-Madison campus

FOOTNOTES

¹ Course also approved for lab credit

² Foundation and Upper-Level Breadth in the Major courses are considered Upper-Level for purposes of this requirement.