

# Biology

Joseph G. Cloud, Dept. Chair, Dept. of Biological Sciences (252 Life Sc. Bldg. 83844-3051; phone 208/885-6280).

**Exception to regulation D-4:** Students who transfer in a course for which the UI requires Biol 115 or 116 as a prerequisite (but who have not yet taken Biol 115 or 116), may take Biol 115 and 116 for credit.

**Note:** Enrollment in lab sections of departmental courses will be limited to the number of stations available in that section.

## **Biol 101 Perspectives in Biology (1 cr)**

Open only to majors. Intro to the disciplines in the fields of biology; current research topics. Graded P/F.

## **Biol 102 Biology and Society (4 cr)**

*May be used as core credit in J-3-b.* Not open to Biology majors or for minor cr. Principles of biology and their relationship to social issues. Three lec and one 3-hr lab a wk.

## **Biol 115 Cells and the Evolution of Life (4 cr)**

*May be used as core credit in J-3-b.* The cell, heredity and evolutionary processes. Three lec and one 3-hr lab a wk.

**Coreq:** Chem 101 or 111

## **Biol 116 Organisms and Environments (4 cr)**

*May be used as core credit in J-3-b.* The evolution of diversity, the biology of plants and animals, and their environments. Three lec and one 3-hr lab a wk.

**Prereq:** Biol 115 and Chem 101 or 111

## **Biol 120 Human Anatomy (4 cr)**

Study of the anatomy of the major organ systems of the human body; lab consists of studying human gross anatomy models and prosected cadavers. Three lec and one 3-hr lab a wk. (Fall only).

## **Biol 121 Human Physiology (4 cr)**

Study of the physiology of the major organ systems of the human body. Three lec and one 3-hr lab a wk. (Spring only)

**Prereq:** Biol 120

## **Biol 210 Genetics (4 cr)**

Genetic mechanisms in animals, plants, and microorganisms. Three lec and one 3-hr lab a wk. (Fall only)

**Prereq:** Biol 115 or MMBB 250

## **Biol 212 Molecular and Cellular Biology (4 cr)**

Current theory and experimental basis of the structure/function of eukaryotic cells. Topics include plasma membrane, organelles, cytoskeleton and cell mobility, the nature of genes, gene expression, DNA replication and cellular reproduction, and signal transduction. Three lec and one 3-hr lab a wk. (Fall only)

**Prereq:** Biol 115.

## **Biol 213 Principles of Biological Structure and Function (4 cr)**

Principles of physiology in plants and animals (homeostasis, hormonal and neural control systems, organismal physiology). Three lec and one 3-hr lab a wk. (Spring only)

**Prereq:** Biol 115 and 116

## **Biol 299 (s) Directed Study (cr arr)**

## **Biol 314 Ecology and Population Biology (4 cr)**

Nutrient cycling and energy flow, populations, population genetics, use and construction of phylogenies, communities and biodiversity. Three lec and one 3-hr lab a wk. (Spring only)

**Prereq:** Biol 115 and 116; and Math 143, 160, or 170. Biol 210 recommended

## **Biol WS324 Comparative Vertebrate Anatomy (4 cr) WSU Biol 324**

General vertebrate anatomy and evolutionary changes in organ systems. Two lec and two 3-hr labs a wk.

**Prereq:** Biol 115 and 116

## **Biol 354 Experimental Approaches in the Biological Sciences (3 cr)**

Experimental analysis of biological systems. (Fall only)

**Prereq:** Biol 210, 212, and 213, or Permission

## **Biol 398 (s) Internship (1-3 cr, max 3)**

Supervised internship in professional biological, non-university settings, integrating academic study with work experience; requires formal written plan of activities to be approved by academic advisor and department chair before engaging in the work; a final written report will be evaluated by on-campus faculty. Graded P/F.

**Prereq:** Permission

#### **Biol 404 (s) Special Topics (cr arr)**

#### **Biol 405 Practicum in Anatomy Laboratory Teaching (2-4 cr. Max 8)**

Organization, preparation, and teaching of anatomy laboratory objectives under faculty supervision. (Fall only)

**Prereq:** Permission

#### **Biol 407 Practicum in Biology Laboratory Teaching (2-6 cr, max 12)**

Organization, preparation, and teaching of lab experiments or demonstrations under faculty supervision.

**Prereq:** Any four of the following courses: Biol 115, 116, 210, 212, 213, or 314; and Permission

#### **Biol 408 Practicum in Human Physiology Laboratory Teaching (2-4 cr, max 8)**

Organization, preparation, and teaching of human physiology laboratory objectives under faculty supervision. (Spring only)

**Prereq:** Biol 121 and Permission

#### **Biol 411 Senior Capstone (2 cr)**

Application of biological principles and information to the analysis of societal and philosophical issues.

**Prereq:** Biol 210, 212, 213, 314, and Sr standing

#### **Biol ID&WS-J417/ID&WS-J517 Endocrine Physiology (3 cr)**

See AVS J451/J551.

#### **Biol 421 Advanced Evolutionary Biology (3 cr)**

Macro and Micro evolutionary patterns and processes examined from molecular, ecological, and paleontological perspectives. (Fall only)

**Prereq:** Biol 314, For 221 or REM 221

#### **Biol 423 Comparative Vertebrate Physiology (4 cr)**

Comparative physiology of the major organ systems found in vertebrates. May involve some evening exams. (Fall only)

**Prereq:** Biol 213, and Chem 275 or 277

#### **Biol 425 Special Topics: Experimental Field Ecology (3 cr)**

Intensive course on diverse aspects of field ecology to be held off-campus. Various global locations (i.e. Costa Rica, Oregon coast, Hawaii) are possible. The course will be scheduled during an 8-10 day period preceding/following the Spring Term (i.e. January or May). Will involve travel and lodging costs at student expense.

**Prereq:** Biol 115, 116, 210, 212, 213, and 314

#### **Biol WS435 Limnology and Aquatic Ecosystem Management (3 cr) WSU ES/RP 411 and Zool 411**

**Prereq:** Biol 115 and Chem 111

#### **Biol WS436 Plant Environmental Biophysics Lab (1 cr) WSU ES/RP and Soils 415**

#### **Biol 444 Genomics (3 cr)**

Structural, functional, and comparative genomics of animals, plants, fungi, and microbes. Case studies illustrating a genomic approach to questions of fundamental biological and societal relevance will be drawn from diverse fields such as human medicine, evolutionary biology, agriculture, and bioterrorism. (Fall only)

**Prereq:** Biol 116 and 210; or MMBB 250

#### **Biol 448 Plant-Animal Interactions (3 cr)**

Principles of interactions between plants and animals; interactions and diversification, coevolution; pollination, fruit and seed dispersal, herbivory, ant-plant and ant-plant-fungal interactions, importance of interactions in conservation biology. One field trip. Biol 314 recommended. (Fall, Alt/yrs)

**Prereq:** Biol 116

#### **Biol ID450 Comparative Vertebrate Reproduction (3 cr) WSU Biol 451/551**

Physiology of major events in reproductive cycles of vertebrates. (Spring, Alt/yrs)

**Prereq:** Biol 116 and 213

#### **Biol ID461 Neurobiology (3 cr) WSU Neuro 461**

Study of the nervous system, with an emphasis on mechanisms of neuronal signaling, the function of sensory and motor systems, and neural development. Recommended: Phys 111, Phys 112, and Chem 275 or 277. (Fall, Alt/yrs)

**Prereq:** Biol 213

#### **Biol 474 Principles of Developmental Biology (3 cr)**

Analysis of mechanisms at cellular and molecular level during metazoan development. (Spring, Alt/yrs)

**Prereq:** Biol 115 and 116 or Biol 212

**Biol 478 Animal Behavior (3 cr)**

Evolution, causation, development, and function of behavior in vertebrates and invertebrates. (Spring only)

**Prereq:** Biol 115 and 116

**Biol 481 Ichthyology (4 cr)**

Anatomy, taxonomy, physiology, genetics, and zoogeography of fishes. Three lec and one 3-hr lab a wk. (Spring only)

**Prereq:** Biol 115 and 116

**Biol 483 Mammalogy (3 cr)**

Evolution, systematics, distribution, and biology of mammals. Two lec and one 3-hr lab a wk; one field trip. (Fall only)

**Prereq:** Biol 115 and 116

**Biol 489 Herpetology (4 cr)**

Evolution, systematics, physiology, and ecology of reptiles and amphibians. Three lectures and one 3-hr lab a wk; field trip. (Fall only)

**Prereq:** Biol 115 and 116

**Biol 493 Practicum in Physical Therapy (1 cr, max 4)**

Minimum of two hrs a wk of practical experience in a PT clinic. Graded P/F.

**Prereq:** Biol 120, Biol 121, Jr standing, 3.0 GPA, and perm of UI allied health advisor.

**Biol 495 Research in Molec/Cell/Dev Biology (cr arr)**

Directed research in faculty laboratory.

**Prereq:** Permission

**Biol 496 Research in Ecology and Evolution (cr arr)**

Directed research in faculty laboratory.

**Prereq:** Permission

**Biol 497 Research in Anatomy and Physiology (cr arr)**

Directed research in faculty laboratory.

**Prereq:** Permission

**Biol 499 (s) Directed Study (cr arr)**

**Biol 500 Master's Research and Thesis (cr arr)**

**Biol 501 (s) Seminar (cr arr)**

**Biol 502 (s) Directed Study (cr arr)**

**Biol 503 (s) Workshop (cr arr)**

**Biol 504 (s) Special Topics (cr arr)**

**Biol 505 Colloquium (1 cr)**

Oral presentation reqd for cr. Graded P/F.

**Prereq:** Permission

**Biol 508 Topics in Neuroscience (1 cr, max arr)**

Same as Neur 508. Seminars and discussion of current topics in neuroscience.

**Prereq:** Graduate standing

**Biol WS509 Development and Plasticity of the Nervous System (3 cr) WSU Biol 553**

A comparative approach to neural development and repair in invertebrates and vertebrates.

**Prereq:** Biol 210; and MMBB 300 or 380; and Biol 423 or a 400-level neurobiology course

**Biol WS515 Plant Environmental Biophysics (2 cr)**

**Biol 521 Graduate Teaching Practicum (3 cr)**

Organization, preparation, and teaching of lab experiments or demonstrations under faculty supervision. Graded pass/fail.

**Prereq:** Graduate standing and Permission

**Biol 525 Readings in Ecological and Evolutionary Genetics (1 cr)**

Seminars and discussion of current research in genetics as it applies to ecology and evolution. (Fall only)

**Biol WS529 Cellular and Molecular Neurobiology (4 cr) WSU Neuro/V Ph 529**

**Biol 545 Principles of Systematic Biology (3 cr)**

The inference of evolutionary trees (phylogeny) and the processes that generate biodiversity from analyses of morphological, molecular, and behavioral data; uses of phylogenies in testing evolutionary and other hypotheses at both inter and intraspecific levels. Two hrs of lec and one 3-hr lab a wk. (Spring, Alt/yrs)

**Prereq:** PISc 205 or Biol 213 and Biol 210

**Biol ID&WS548 Evolutionary Ecology (3 cr)**

See WLF 548.

**Biol ID&WS551 Seminar on Reproductive Biology (1 cr) WSU AS 582**

Current topics in reproductive biology.

**Prereq:** Graduate standing

**Biol 552 Professional Development for Biologists (3 cr)**

Oral and written presentation skills for communicating scientific information, including grant writing and data presentation for manuscripts and seminars.

**Prereq:** Graduate standing

**Biol 553 Ethical Issues in Biological Research (1 cr)**

Practical ethical issues for biologists.

**Prereq:** Graduate standing

**Biol ID558 Reproductive Biology of Fishes (2 cr) WSU Biol 511**

A graduate level course covering all aspects of the reproductive biology of fishes. The class will meet once per week for 2 hours; the first hour will be used for a formal lecture, the second hour will be used for informal student presentations/discussion of current literature topics or assigned readings in the field. (Spring only, Alt/yrs)

**Biol WS559 Molecular and Cellular Reproduction (3 cr) WSU MBioS 528**

**Prereq:** AVS 452 or Biol 450/550

**Biol 563 Mathematical Genetics (3 cr)**

See Math 563.

**Biol 600 Doctoral Research and Dissertation (cr arr)**