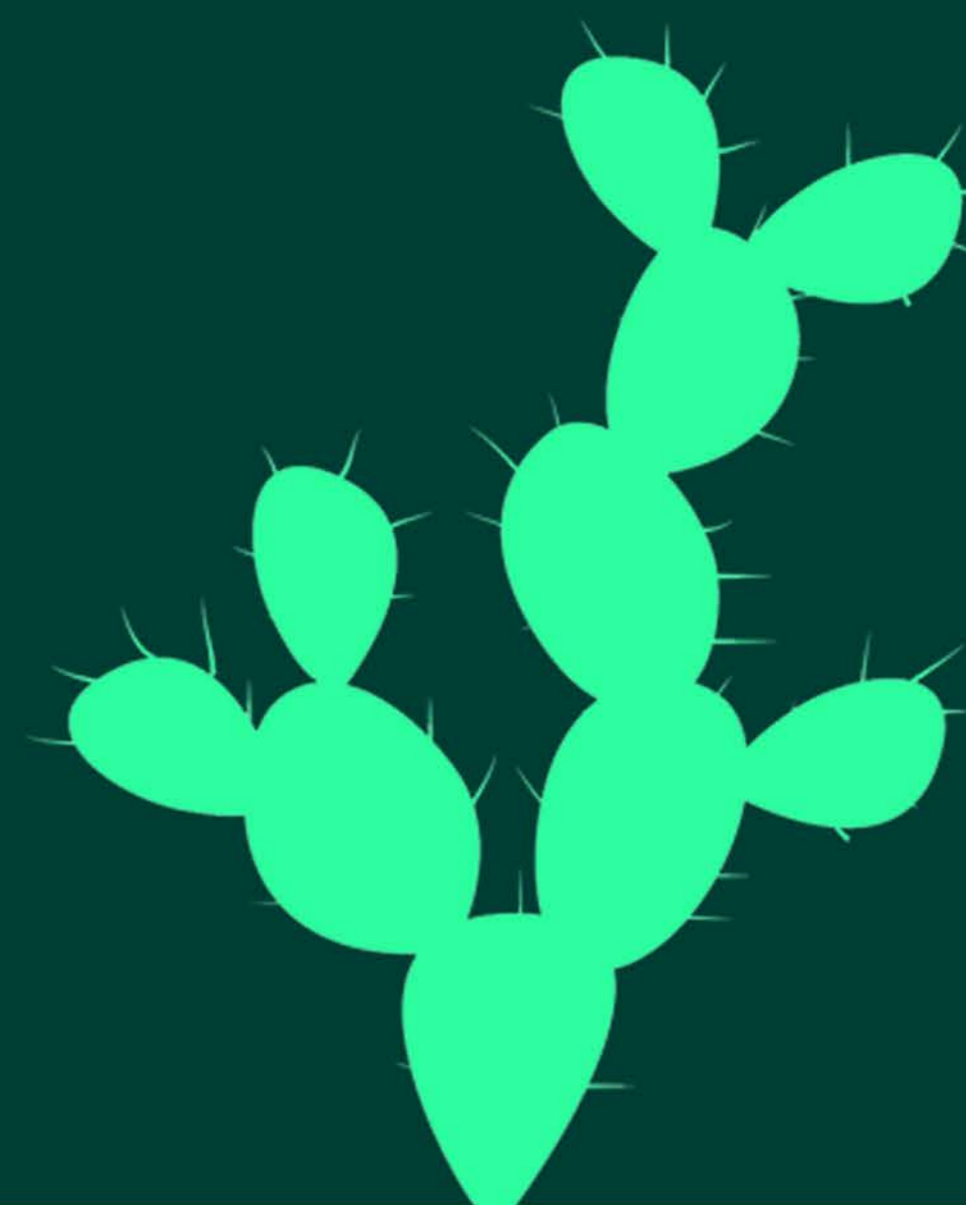




BIOINFORMATICS ELECTIVES

Spring



Courses in **BOLD** satisfy the **WRITING EMPHASIS** requirement. Students may only use a course once within their major electives.

CELL & MOLECULAR BIOLOGY

ACBS 433 - Medical and Molecular Virology
ECOL 345 - Biodiversity and the Tree of Life
ECOL 496G - Complex Systems: Networks & Self-organization in Biology
ENVS 477 - Principles of Ecotoxicology
IMB 401 - Medical Microbiology and Immunology
MCB 305 - Cell and Developmental Biology
MCB 411 - Molecular Biology
MCB 416A - Bioinformatics and Functional Genomic Analysis
MCB 473 - Recombinant DNA Methods and Applications
NROS 307 - Cellular Neurophysiology
NROS 310 - Molecular and Cellular Biology of Neurons
NROS 412 - Molecular Mechanisms of Learning and Memory
NROS 430 - Neurogenetics
PLP 428L - Microbial Genetics Laboratory
PLP 428R - Microbial Genetics
PSIO 404 - Advanced Topics in Cellular Physiology
PSIO 484 - Cardiovascular Muscle Biology and Disease

GENETICS

ECOL 345 - Biodiversity and the Tree of Life
ECOL 346 - Bioinformatics
ECOL 426 - Population Genetics
ECOL 480 - Mathematical Models in Biology
ECOL 496G - Complex Systems: Networks & Self-organization in Biology
MCB 416A - Bioinformatics and Functional Genomic Analysis
MCB 473 - Recombinant DNA Methods and Applications
NROS 430 - Neurogenetics
PLP 428L - Microbial Genetics Laboratory
PLP 428R - Microbial Genetics
PLS 312 - Animal and Plant Genetics
PLS 340 - Introduction to Biotechnology
PLS 340L - Biotechnology Laboratory
PLS 440 - Mechanisms in Plant Development
PLS 449A - Plant Genetics and Genomics

PHYSICAL SCIENCE

ASTR 475 - Planetary Astrobiology
ATMO 460 - Bioclimate
ECOL 480 - Mathematical Models in Biology
ENVS 376 - Principles of Ecological Climatology
ENVS 477 - Principles of Ecotoxicology
GEOS 308 - Paleontology
GEOS 330 - Introduction to Remote Sensing
GEOS 412A - Ocean Sciences
GEOS 412B - Ocean Sciences Field Course
GEOS 430 - The Chemical Evolution of Earth
GEOS 479 - Introduction to Climate Dynamics
MCB 437 - Life in Extreme Environments
REM 490 - Remote Sensing for the Study of Planet Earth
RNR 403 - Applications of Geographic Information Systems
RNR 417 - Geographic Information Systems for Natural and Social Sciences
RNR 458 - Ecosystem Ecology and a Sustainable Future

SCIENCE & SOCIETY

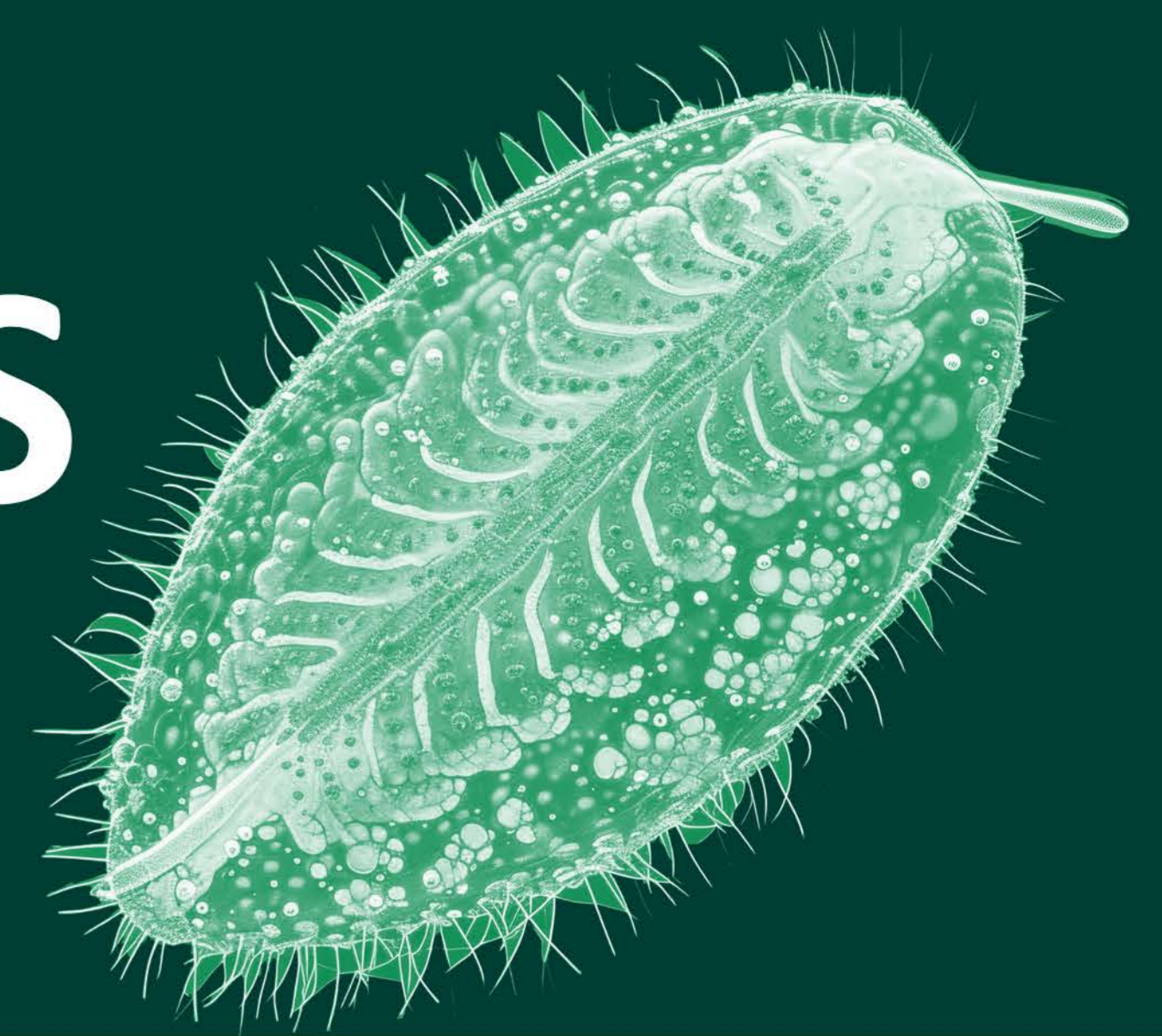
CHS 421 - Sociology of Drugs and Addiction
ECOL 360 - Marine Ecology & Conservation
ECOL 406R - Conservation Biology
ECOL 409 - Evolution of Infectious Disease
ENTO 407 - Insect Discovery
ENTO 457 - Medical-Veterinary Entomology
EPID 309 - Introduction to Epidemiology
HIST 311 - History of Epidemics
HPS 306 - Drugs and Society
HPS 387 - Health Disparities & Minority Health
LAW 459 - Public International Environmental Law
MAS 405 - Traditional Indian Medicine: Health, Healing and Well Being
MCB 404 - Bioethics
PCOL 305 - Scientific Writing for Health Science Students
PCOL 320 - What's Your Poison? Toxicology of Substances that Surround Us
PHIL 321 - Medical Ethics
PHIL 323 - Environmental Ethics
PHIL 347 - Neuroethics
PHP 305 - Population Health in the Digital Age
PHP 308 - Community Health Education for Disease Outbreaks
SOC 410 - The Hospital as a Small Society: The Social Organization of Medicine





BIOINFORMATICS ELECTIVES

Spring



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ORGANISMAL BIOLOGY

ACBS 400B - Animal Anatomy and Physiology
ACBS 401L - Domestic Animal Anatomy & Physiology Laboratory
ACBS 403R - Biology of Animal Parasites
ACBS 406 - Diseases of Companion Animals
ACBS 433 - Medical and Molecular Virology
ACBS 443 - Research Animal Methods
ACBS 456 - Aquaculture
ANTH 472 - Zooarchaeology and Taphonomy: Laboratory Methods
ECOL 330 - Evolution of Animal Form and Function
ECOL 404R - Biology of the Oceans
ECOL 409 - Evolution of Infectious Disease
ECOL 427 - Ecology and Evolution of the Mammalian Microbiome
ECOL 437 - Vertebrate Physiology
ECOL 483 - Herpetology
ECOL 484 - Ornithology
ECOL 488 - Arizona Mammals
ECOL 496G - Complex Systems: Networks & Self-organization in Biology
ENTO 405 - Aquatic Entomology
ENTO 407 - Insect Discovery
ENTO 457 - Medical-Veterinary Entomology
ENVS 425 - Environmental Microbiology
ENVS 426 - Environmental Microbiology Laboratory
ENVS 475 - Freshwater and Marine Algae
IMB 401 - Medical Microbiology and Immunology
IMB 402 - Medical Microbiology Basics
IMB 404 - Medical Virology Basics
IMB 406 - Human Immunology
MCB 437 - Life in Extreme Environments
MIC 328R - Microbial Physiology
NROS 381 - Animal Brains, Signals, Sex, and Social Behaviors
NROS 420 - Neuroscience of Survival
PLP 320 - Microbiomes
PLP 428L - Microbial Genetics Laboratory
PLP 428R - Microbial Genetics
PLS 360 - Plant Growth and Physiology
PLS 361 - Principles of Plant Physiology Laboratory
WFSC 453 - Wildlife and Zoonotic Disease Ecology

ECOLOGY, EVOLUTION, & BEHAVIOR

ANTH 431 - Primate Sexuality
ANTH 472 - Zooarchaeology and Taphonomy: Laboratory Methods
ANTH 495D - Special Topics in Biological Anthropology
ECOL 330 - Evolution of Animal Form and Function
ECOL 345 - Biodiversity and the Tree of Life
ECOL 360 - Marine Ecology & Conservation
ECOL 404R - Biology of the Oceans
ECOL 406R - Conservation Biology
ECOL 409 - Evolution of Infectious Disease
ECOL 426 - Population Genetics
ECOL 427 - Ecology and Evolution of the Mammalian Microbiome
ECOL 473 - Topics in Behavioral Ecology
ECOL 480 - Mathematical Models in Biology
ECOL 488 - Arizona Mammals
ECOL 496G - Complex Systems: Networks & Self-organization in Biology
ENTO 405 - Aquatic Entomology
ENTO 407 - Insect Discovery
ENVS 475 - Freshwater and Marine Algae
ENVS 477 - Principles of Ecotoxicology
GEOS 308 - Paleontology
GEOS 330 - Introduction to Remote Sensing
GEOS 497C - Dendrochronology
MCB 437 - Life in Extreme Environments
NROS 381 - Animal Brains, Signals, Sex, and Social Behaviors
NROS 420 - Neuroscience of Survival
RNR 316 - Natural Resources Ecology
RNR 355 - Introduction to Wildland Fire
RNR 417 - Geographic Information Systems for Natural and Social Sciences
WFSC 445 - Population Ecology
WFSC 453 - Wildlife and Zoonotic Disease Ecology

BIOINFORMATICS

BE 429 - Applied Cyberinfrastructure Concepts
BE 434 - Biosystems Analytics
BIOC 384 - Fundamentals of Biochemistry
BIOC 385 - Metabolic Biochemistry
GAME 452 - Advanced Game Development
GEOG 470 - Geo-Databases
ISTA 321 - Data Mining and Discovery
ISTA 322 - Data Engineering
ISTA 350 - Programming for Informatics Applications
ISTA 410 - Bayesian Modeling and Inference
ISTA 421 - Introduction to Machine Learning
NETV 379 - Cloud Computing
PHIL 401B - Symbolic Logic

