



Environmental Health

The ENST concentration in Ecosystem Health gives students the concepts and skills to work in this broad and increasingly important field with wide ranging applications in the environmental science and public health fields. The field encompasses environmental factors and ecosystem functions that affect human health and the effects of human activities on the ecosystem products and services we depend on. Example topics within the field include ecological risk analysis, environmental toxicology, environmental impact assessment, chemical fate and transport, human health risk assessment, industrial hygiene, air quality, environmental microbiology, food safety and security, biodiversity and human health, and children's environmental health.

Science and Math Fundamentals Required (56-57 credits):

- ▲ **ENST 200** Fundamentals of Soil Science (F; Sp, 4)
- ENST 233** Introduction to Environmental Health (F; Sp, 3)
- ENST 360** Ecosystem Ecology (F, 4)
- ENST 389** Internship (F; S, 3)
- ◆ **ENST 471** Capstone I (F, 2)
- ENST 472** Capstone II (Sp, 3)
- ▲ **BSCI 170/171** Principles of Biology I (F; Sp; Su, 4)
- ▲ **BSCI 160/161** Principles of Biology II (F; Sp; Su, 4)
- BSCI 207** Principles of Biology III (F; Sp, 3)
- BSCI 223** General Microbiology (F; Sp; Su, 4)
- ▲ **CHEM 131&132** Fundamentals of General Chemistry & Lab (F; Sp; Su, 4)
- CHEM 231&232** Organic Chemistry I & Lab (F; Sp; Su, 4)
- ▲ **CHEM 241/242** Organic Chemistry II & Lab (F; Sp; Su, 4)
- ▲ **MATH 140** Calculus I (4) - or- **MATH 120** Elementary Calculus I (F; Sp; Su, 3)
- ▲ **PHYS 121** Fundamentals of Physics (F; Sp; Su, 4)
- ▲ **BIOM 301** Introduction to Biometrics (F; W; Sp; Su, 3)

Concentration Depth (12 credits):

- ENST 333** Ecosystem Health and Protection (F, 3)
- ENST 334** Environmental Toxicology (S, 3)
- ▲ **ENST 434** Toxic Contaminants: Sources, Fate, and Effects (F, 3) -or-
- ▲ **ENST 436** Emerging Environmental Threats (S, 3)
- ENST 445** Ecological Risk Assessment (S, 3)

Ecosystem Health and Human Health Electives (12 credits)

Example courses listed on reverse side. Courses applied to elective requirements may not be applied to other curriculum requirements.

- ▲ Benchmark to be completed by 30 credits
- ▲ Benchmark to be completed by 60 credits
- ▲ Benchmark to be completed by 90 credits
- ◆ Requires prior approval

Highlighted Courses are ENST CORE
Students must maintain a 2.0 grade point average in major required courses

Students will take approximately 6 credits each of Ecosystem Health and Human Health electives to tailor their program to their specific interests (total = 12 credits). Ecosystem Health electives cannot be double-counted as Human Health Electives, and vice-versa. This is not an exhaustive list of electives; other ecosystem and human health courses can be substituted with advisor approval. Required electives may not be applied in more than one category, e.g. Elective selections will not also satisfy Concentration Depth requirements.

Ecosystem Health Electives (at least 6 credits):

ANSC 252	Introduction to the Diseases of Wildlife (3)
AOSC 200/201	Weather and Climate & Lab (4)
AOSC 434	Air Pollution (3)
BSCI 222	Principles of Genetics (4)
BSCI 330	Cell Biology and Physiology (4)
BSCI 447	General Endocrinology (3)
BSCI 467	Freshwater Biology (4)
BSCI 473	Marine Ecology (3)
CHEM 271/272	General Chemistry and Energetics & Bioanalytical Lab (4)
ENST 314	Fisheries Sustainability and Management (3)
ENST 405	Energy and Environment (3)
ENST 415	Renewable Energy (3)
ENST 421	Soil Chemistry (4)
ENST 422	Soil Microbial Ecology (3)
ENST 423	Soil-Water Pollution (3)
ENST 430	Wetland Soils (3)
ENST 434	Toxic Contaminants: Sources, Fate, and Effects (3)
ENST 436	Emerging Environmental Threats (3)
ENST 440	Crops, Soils and Civilization (3)
ENST 441	Sustainable Agriculture (3)
ENST 443	Industrial Ecology (3)
ENST 450	Wetland Ecology (3)
ENST 460	Principles of Wildlife Management (3)
ENST 461	Urban Wildlife Management (3)
ENST 462	Field Techniques in Wildlife Management (3)
ENST 463	Wildlife Habitat and Population Modeling (3)
ENST 479	Tropical Ecology and Resource Management (3)
ENST 499	Special Topics in Environmental Science and Technology (1-4)
GEOG 415	Land Use, Climate Change, and Sustainability (3)
GEOG 418	Field and Laboratory Techniques in Environmental Science (1-3)
GEOG 372	Remote Sensing (3)
GEOG 373	Geographic Information Systems (3)
GEOL 452	Watershed and Wetland Hydrology (3)
LARC 450	Environmental Resources (3)
PLSC 400	Environmental Plant Physiology (3)

Human Health Electives (at least 3 credits must come from the Human Dimensions area):

BSCI 201	Human Anatomy and Physiology I (4)
BSCI 202	Human Anatomy and Physiology II (4)
BSCI 330	Cell Biology and Physiology (4)
BSCI 417	Microbial Pathogenesis (3)
BSCI 422	Principles of Immunology (3)
BSCI 424	Pathogenic Microbiology (4)
BSCI 425	Epidemiology and Public Health (3)
BSCI 437	General Virology (3)
BSCI 440	Mammalian Physiology (4)
ENST 499	Special Topics in Environmental Science and Technology (1-4)
ENST 432	Environmental Microbiology (3)
ENST 436	Emerging Environmental Threats (3)
GEOG 331	Introduction to Human Dimensions of Global Change (3)
GEOG 431	Culture and Natural Resource Management (3)
HLTH 140	Personal and Community Health (3)
NFSC 430/434	Food Microbiology & NFSC 434 Food Microbiology Lab (5)

Human Dimensions Area (subset of Human Health Electives):

ANTH 410	Theory and Practice of Health and Community development -or-
ANTH 450	Theory and Practice of Environmental Anthropology (3)
AREC 240	Introduction to Economics and the Environment -or-
ENST410	Ecosystem Services: an Integrated Analysis (3-4)
AREC 332	Introduction to Natural Resource Policy (3)
AREC 365	World Hunger, Population, and Food Supplies (3)
ENSP 102	Introduction to Environmental Policy -or-
ENSP 330	Introduction to Environmental Law -or-
ENSP 340	Water: Science, Ethics, and Law (3)
GEOG 331	Introduction to Human Dimensions of Global Change -or-
GEOG 341	Culture and Natural Resource Management (3)
LARC 450	Environmental Resources (3)
PHIL 261	Philosophy of the Environment (3)
PAAF 300	Introduction to Sustainability (3)
SOCY 305	Scarcity and Modern Society -or-
SOCY 406	Globalization (3)
SPHL 400**	Introduction to Global Health -or-
SPHL 401**	History of Public Health (3)
URSP 250	The Sustainable City: Exploring Opportunities & Challenges (3)

**Restricted. Permission required. Meets at Shady Grove Campus.

