DEPARTMENT OF
ENVIRONMENTAL
SCIENCE & TECHNOLOGY

FOR STUDENTS MATRICULATED FALL 2018 AND AFTER

Ecosystem 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, and bviodiversity and human health.

ENST Core (44 credits)

			Semester Projected	Semester Taken	Final Grade
▲	**BSCI 170&171**	Principles of Molecular & Cellular Biology (F, Sp; 4)			
▲	**MATH 120**	Elementary Calculus I (F, Sp, Su; 3)			
▲	**BSCI 160&161**	Principles of Ecology & Evolution (F, Sp; 4)			
▲	**CHEM 131&132**	Fundamentals of General Chemistry & Lab (F, Sp, Su; 4)			
▲	**ENST 200**	Fundamentals of Soil Science (F, Sp; 4)			
▲	**ENST 233**	Introduction to Environmental Health (F, Sp; 4)			
▲	**CHEM 231&232**	Organic Chemistry I & Lab (F, Sp, Su; 4)			
▲	**PHYS 121**	Fundamentals of Physics (F, Sp, Su; 4)			
▲	**GEOG 306**	Introduction to Quantitative Methods for the Geographic Environmental Sciences (F, W, Sp, Su; 3) -**or**-			
	BIOM 301	Introduction to Biometrics (F, W, Sp; 3)			
▲	**ENST 360**	Ecosystem Ecology (F; 4)			
◆	**ENST 389**	Professional Internship (F, Sp; 3)			
◆	**Senior Integrative Experience** (F, Sp; 3)				
	ENST 388	Honors Thesis Research (F, Sp; 3) -**or**-			
	ENST 470	Ideas into Impact: Scholarship and Practice (Sp; 3) -**or**-			
	ENST 486	Senior Professional Internship (F, Sp; 3) -**or**-			
	ENST 489	Research Experience (Group or individual project) (F, Sp; 3)			

Concentration Core (17 credits)

	BSCI 207	Principles of Biology III - Organismal Biology (F, Sp; 3)			
	BSCI 222	Principles of Genetics (F, Sp, Su; 4) -**or**-			
	BSCI 223	General Microbiology (F, Sp, Su; 4)			
	CHEM 241&242	Organic Chemistry II (F, Sp; 4)			
	ENST 333	Ecosystem Health and Protection (F; 3)			
	ENST 334	Environmental Toxicology (Sp; 3)			

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

*Students must maintain an overall GPA of 2.0 and a grade of **C- or better for all ENST required classes.***

Courses not selected here may count as technical electives on the back, but cannot be counted as both an elective and as a concentration CORE/DEPTH course.

Any combination of electives can be taken. Courses appear in blocks of related topics to assist students in tailoring their program to particular interests with Ecosystem Health. Under some circumstances, other 300 or 400 level electives can be substituted with advisor's approval.

Concentration Depth (6 credits - Choose 2 courses)

		Semester Projected	Semester Taken	Final Grade
☐	**ENST 403** Invasive Species Ecology (F; 3)			
☐	**ENST 423** Soil-Water Pollution (Sp; 3)			
☐	**ENST 434** Toxic Contaminants: Sources, Fate, and Effects (F; 3)			
☐	**ENST 436** Emerging Environmental Threats (Sp; 3) Ec			
☐	**ENST 445** ological Risk Assessment (TBA; 3)			

Technical Electives (12 credits)

Environmental Health

☐	**ENST 405** Energy and Environment (Sp; 3)			
☐	**GEOG 372** Remote Sensing (F, Sp; 3)			
☐	**GEOG 415** Land Use, Climate Change, and Sustainability (Sp; 3)			
☐	**GEOL 452** Watershed and Wetland Hydrology (TBA; 3)			
☐	**LARC 450** Environmental Resources (TBA; 3)			

Ecological Processes

☐	**BSCI 467** Freshwater Biology (TBA; 4)			
☐	**ENST 422** Soil Microbial Ecology (TBA; 3)			
☐	**ENST 450** Wetland Ecology (F; 3)			
☐	**ENST 460** Principles of Wildlife Management (F; 3)			
☐	**PLSC 400** Environmental Plant Physiology (Sp; 4)			

Human Health

☐	**BSCI 424** Pathogenic Microbiology (F; 4)			
☐	**BSCI 425** Epidemiology and Public Health (TBA; 3)			
☐	**BSCI 437** General Virology (F, Sp; 3)			
☐	**BSCI 440** Mammalian Physiology (F, Sp; 4)			

Cultural or Social Dimensions

☐	**ENST410** Ecosystem Services: an Integrated Analysis (TBA; 3)			
☐	**GEOG 331** Introduction to Human Dimensions of Global Change (Sp; 3)			
☐	**GEOG 431** Culture and Natural Resource Management (F; 3)			
☐	**PUAF 301** Introduction to Sustainability (Sp; 3)			
☐	**SOCY 406** Globalization (TBA; 3)			