

HEALTH SCIENCE - ENVRN. HLTH. (HSEH)

HSEH 232 Intro To Environ Hlth (3 Credits)

Lecture: 3, **Lab:** 0

Introduction to Environmental Health (3) Survey of topics in population and resource management, fundamentals of air and water pollution, solid and hazardous wastes, pest and vector control, and radiation protection. Open to majors and non-majors. Three lecture hours per week. Prerequisite: Consent of the Program Director.

College/School: College Of Pharmacy/Hlth Sci.

Department: Dpt of Pharmaceu Sc& Env HS

HSEH 233 Epidemiology & Biostat (4 Credits)

Lecture: 4, **Lab:** 0

Epidemiology and Biostatistics (4) Principles of distribution and determinants of diseases in human populations, including statistical methods and computer applications in data collection and analysis. Four hours of lecture per week. Prerequisite: HSEH 232.

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HSEH 234 Health Physics (3 Credits)

Lecture: 3, **Lab:** 0

Health Physics (3) Fundamentals of ionizing and non-ionizing radiation with respect to source, exposure dose, biological interaction, methods of surveillance, and protection. Three hours of lecture per week. Prerequisite: HSEH 233.

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HSEH 235 Human Ecology (3 Credits)

Lecture: 3, **Lab:** 0

Human Ecology (3) Principles of environmental physiology; medical geography and sociology; international and travel health; adaptation mechanisms to extremes of temperature, pressure, altitude, and microgravity; circadian rhythms. Three hours of lecture per week. Prerequisite: HSEH 233.

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HSEH 334 Pub Hlth Org & Admin (3 Credits)

Lecture: 3, **Lab:** 0

Public Health Organization and Administration (3) Principles of organization and administration of environmental health programs by governmental agencies, including disease surveillance and health data management, environmental policy and ethics, and health education. Three hours of lecture per week. Prerequisite: HSEH 233.

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HSEH 337 Environ Microbio (4 Credits)

Lecture: 2, **Lab:** 4

Environmental Microbiology (4) Survey of microorganisms of ecological, medical, and industrial importance with respect to nutrient recycling, food spoilage, infectious diseases, and biotechnology. Two hours of lecture and four hours of laboratory per week. Prerequisite: HSEH 232.

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HSEH 338 Water Pollution & Control (3 Credits)

Lecture: 3, **Lab:** 0

Water Pollution and Control (3) Survey of chemical, physical, and biological pollutants affecting water quality for drinking and other designated end uses. Pollution monitoring and control strategies also discussed. Three hours of lecture per week. Prerequisite: HSEH 337.

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HSEH 339 Air Pollution & Control (3 Credits)

Lecture: 3, **Lab:** 0

Air Pollution and Control (3) Survey of ambient and indoor air quality changes due to toxic emissions. Atmospheric chemistry and meteorology, standard air pollution indicators, global climate changes, and control strategies discussed. Three hours of lecture per week. Prerequisites: HSEH 232 and HSEH 344.

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HSEH 344 Environ Chem (4 Credits)

Lecture: 2, **Lab:** 4

Environmental Chemistry (4) Comprehensive survey of behavior and fate of chemical pollutants in atmosphere, hydrosphere, geosphere, and biosphere, including standard methods of chemical analysis of environmental media. Two hours of lecture and four hours of laboratory per week. Prerequisite: HSEH 232.

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HSEH 425 Insect & Vector Control (3 Credits)

Lecture: 3, **Lab:** 0

Insect and Vector Control (3) Comprehensive survey of agricultural and urban pests, disease transmitting vectors and their habitat, principles of entomology, parasitology and zoonoses, integrated vector control, and pest management. Three hours of lecture per week. Prerequisite: HSEH 344.

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HSEH 431 Solid Waste Mgmt (3 Credits)

Lecture: 3, **Lab:** 0

Solid Waste Management (3) Municipal solid waste problems and solutions: generation, storage, collection, transport, processing, and disposal. Three hours of lecture per week. Prerequisite: HSEH 337.

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HSEH 432 Hazardous Waste Mgmt (3 Credits)

Lecture: 3, **Lab:** 0

Hazardous Waste Management (3) Industrial, medical, and household hazardous waste problems and solutions: generation, characterization, transport, storage, treatment, and disposal. Minimization, exchange, recovery, incineration, and secure landfills discussed. Three hours of lecture per week. Prerequisites: HSEH 338 and HSEH 344.

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HSEH 433 Institu Hlth & Safety (3 Credits)

Lecture: 3, **Lab:** 0

Institutional Health and Safety (3) Survey of structural, electrical, and fire safety of residential, school, hospital, day-care, and penal institutions. Sick building syndrome, emergency planning, and accommodation of disabled persons discussed. Three hours of lecture per week. Prerequisite: HSEH 235.

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HSEH 434 Sewage Trtmt & Disposal (3 Credits)

Lecture: 3, **Lab:** 0

Sewage Treatment and Disposal (3) Industrial, agricultural, and municipal wastewater collection, transport, treatment, and disposal. Design and operation of sewage treatment plants, on-site and waterless systems, and sludge management discussed. Three hours of lecture per week. Prerequisite: HSEH 338.

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HSEH 435 Environ Hlth Probs (3 Credits)

Lecture: 3, **Lab:** 0

Environmental Health Problems (3) Global environmental issues: famine and starvation, environmental refugees, environmental justice and equity, hazardous waste sites, housing and urban blight, crime and substance abuse. Three hours of lecture per week. Prerequisite: Consent of the Program Director.

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HSEH 436 Independent Study (3 Credits)

Lecture: 3

Students will acquire and apply knowledge of environmental health issues, challenges, and environmental health systems. When necessary for student progression, the course will offer a specialized designed curriculum to fill student deficiencies that are needed for on-time graduation. 3 hours lecture per week.

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HSEH 442 Safety & Health (3 Credits)

Lecture: 3, **Lab:** 0

Occupational Safety and Health (3) Recognition, measurement, evaluation, and control of workplace hazard exposures. Fundamentals of industrial hygiene, ergonomics, occupational disease surveillance, hazard communication, and worker protection discussed. Three hours of lecture per week. Prerequisites: HSEH 339 and HSEH 450.

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HSEH 450 Environ Toxicology (3 Credits)

Lecture: 3, **Lab:** 0

Environmental Toxicology (3) Comprehensive survey of principles of toxicodynamics and toxicokinetics; xenobiotic dispersal and ecosystem response; exposure pathways and target organs; mechanisms of toxicity; toxicity testing for mutagenesis, carcinogenesis, and teratogenesis. Three hours of lecture per week. Prerequisite: HSEH 234.

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HSEH 451 Environ Impact Assessmt (3 Credits)

Lecture: 3, **Lab:** 0

Environmental Impact Assessment (3) Consideration of environmental impacts and risks of legislative proposals, policies, programs, and projects following NEPA regulations: qualitative/quantitative risks, identification, characterization, exposure assessment, dose-response determination, interpretation, communication, and management. Three hours of lecture per week. Prerequisite: Consent of the Program Director.

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HSEH 460 Internship (3 Credits)

Lecture: 3

Internship (3) Field practicum in industry, governmental agencies, consulting firms, and academic research facilities providing observation and participation in the practice of environmental health programs. . Prerequisite: Junior level EH major prior to enrolling in the course.

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