

ENVIRONMENTAL SCIENCE (ENV)

ENV 120 Introduction to Occupational Safety and Health 3 Hours

An introduction to the principles of occupational safety and health. A survey course covering the basic principles and techniques of accident investigation and prevention. Includes field trips. **Colonnade/Statewide General Education Code E-SB | SB**

Recent Term(s) Offered: spring 2020; fall 2020; spring 2021; fall 2021; spring 2022; fall 2022

ENV 221 Safety and Health Standards, Codes, and Regulations 3 Hours

A review of the important occupational safety and health standards and codes with particular emphasis on application of these codes to typical work situations. Includes field trips. Note: Permission of instructor may be required.

Prerequisite(s): ENV 120

Recent Term(s) Offered: spring 2021; spring 2022

ENV 280 Introduction to Environmental Science 3 Hours

An introductory course devoted to the study of environmental issues. A general understanding of the application of science to solve contemporary environmental challenges. **Colonnade/Statewide General Education Code E-NS | NS**

Equivalent(s): PH 280

Recent Term(s) Offered: winter 2020; spring 2020; summer 2020; fall 2020; winter 2021; spring 2021; summer 2021; fall 2021; winter 2022; spring 2022; summer 2022; fall 2022

ENV 321 Fundamentals of Industrial Hygiene 3 Hours

A basic introduction to the field of industrial hygiene. A survey of the effects of toxic agents on the body and general methods of control. Includes field trips. Note: Permission of instructor may be required.

Prerequisite(s): MATH 117 and CHEM 105 and CHEM 106

Corequisite(s): ENV 323

Recent Term(s) Offered: spring 2020; fall 2020

ENV 322 Physical Hazards Recognition and Control I 3 Hours

An examination of physical hazards in the work environment and methods of recognition and control. Includes field trips. Note: Permission of instructor may be required.

Prerequisite(s): ENV 221

Recent Term(s) Offered: spring 2020; fall 2021; fall 2022

ENV 323 Fundamentals of Industrial Hygiene Laboratory 1 Hour

Examines basic industrial hygiene sampling, measurement and analytical techniques. Laboratory exercises will include airflow calibration standards, procedures for calibration of personal sampling pumps, instrumentation and indoor air quality monitoring methodology.

Corequisite(s): ENV 321

Course Fee: \$50

Recent Term(s) Offered: spring 2020

ENV 360 Air Pollution Control 3 Hours

Examines air pollution sources, nature and behavior of air pollutants, air sampling and analysis, dispersion and diffusion in the atmosphere, air pollution meteorology, and methods and equipment for community air pollution control. Topics in indoor air quality (IAQ), modeling, and prediction, air quality control regulations, control strategies for stationary and mobile sources.

Prerequisite(s): CHEM 107 and CHEM 108 and MATH 118

Recent Term(s) Offered: fall 2020; spring 2022

ENV 365 Air Pollution Control Laboratory 1 Hour

Provides hands-on experience with field instrumentation and equipment, calibration methods and quantitative determination of different physical and chemical air pollutants. Examines air sampling, measurement and analytical methodologies and basic scientific and analytical techniques used in air pollution control.

Course Fee: \$50

Recent Term(s) Offered: None

ENV 375 Introduction to Water Resources 3 Hours

Recent advances and the present state of water resources; water resources planning and development; management and administration. Priorities in water resources research. Selected case histories.

Recent Term(s) Offered: None

ENV 380 Principles of Environmental Toxicology 3 Hours

An overview of the principles of environmental toxicology. Reviews the effects of environmental toxicants in relation to ecosystems and human health and provides an overview of techniques used in assessing the presence and distribution of environmental toxicants.

Prerequisite(s): CHEM 105 and CHEM 106 and MATH 118 and ENV 280

Recent Term(s) Offered: spring 2020; spring 2021

ENV 410 Water Treatment Processes 3 Hours

Determination of water quality characteristics pertinent to water and waste-water treatment.

Prerequisite(s): CHEM 107 and CHEM 108 and MATH 118

Corequisite(s): ENV 411

Recent Term(s) Offered: spring 2021

ENV 411 Water Treatment Processes Laboratory 1 Hour

Application of water treatment processes in a laboratory. Topics will include water quality measurements, water treatment methods and monitoring.

Prerequisite(s): ENV 375

Corequisite(s): ENV 410

Course Fee: \$50

Recent Term(s) Offered: spring 2021

ENV 423 Safety Program Management 3 Hours

Acquaints students with the common elements of a modern safety program. Note: Permission of instructor may be required.

Prerequisite(s): ENV 120 and ENV 221

Recent Term(s) Offered: fall 2022

ENV 430 Radiological Health 3 Hours

Fundamentals of detection of ionizing radiation, radiation interaction, with matter biological effects radiation dosimetry and radiation protection concepts.

Prerequisite(s): PHYS 332

Recent Term(s) Offered: None

ENV 435 Radiological Health Laboratory 1 Hour

A laboratory course correlated with ENV 430. Two laboratory hours per week.

Recent Term(s) Offered: None

ENV 460 Environmental Management 3 Hours

Provides students with a working knowledge of environmental management techniques, standards, permitting and programs that used to protect our air, water, and land resources. Off-campus travel is required. Students are responsible for arranging their own transportation to designated sites.

Prerequisite(s): ENV 360 (may be taken concurrently) and ENV 410 (may be taken concurrently) and ENV 480 (may be taken concurrently)

Recent Term(s) Offered: fall 2021; fall 2022

ENV 474 Environmental Risk Assessment 3 Hours

Develops both qualitative and quantitative skills in assessing the health risk of exposure to hazardous environmental agents. Topics include risk prioritization approaches and exposure monitoring strategies. Laboratory sessions focus on the application of risk assessment software tools and include a field project. Off-campus travel is required. Students are responsible for arranging their own transportation to designated sites.

Prerequisite(s): ENV 321 and ENV 380

Recent Term(s) Offered: fall 2020; spring 2022

ENV 475 Selected Topics in Env 1-3 Hours (repeatable max of 9 hrs)

A consideration of special topics to acquaint the advanced student with significant problems and developments of current interest in environmental technology. Topics to vary each semester offered. Field trips as appropriate. Note: Permission of instructor required.

Recent Term(s) Offered: fall 2020; spring 2021; fall 2021; fall 2022

ENV 480 Hazardous and Solid Waste Management 3 Hours

Includes the physical, chemical, and biological stressors associated with both hazardous and solid waste. Emphasis on characterization and remediation efforts.

Prerequisite(s): CHEM 107 and CHEM 108 and MATH 118

Recent Term(s) Offered: spring 2020; spring 2022

ENV 485 Educational Experiences in Occupational Safety and Health 3 Hours

Prerequisite(s): Permission of instructor. Special collection of selected short courses with content focused in the area of occupational safety and health. Instruction provided by outside agencies including the Kentucky Labor Cabinet, the Kentucky Regional Technology Center, and the North Carolina National Institute for Occupational Safety and Health Educational Resource Center. Total instruction time approximately 160 hours. .

Recent Term(s) Offered: None

ENV 486 Senior Environmental Health Seminar 1 Hour

Current environmental health issues discussed, including identification of possible careers in environmental health fields.

Restriction(s): Students with a semester level of Freshman, Junior or Sophomore may **not** enroll.

Recent Term(s) Offered: spring 2021

ENV 490 Food Safety 3 Hours

Principles of food safety in the processing and distribution of milk and milk products, meat, shellfish, and other foods, food borne illnesses and sanitation standards, surveillance and evaluation. Off-campus travel is required. Students must arrange own transportation for required field trips. Note: 6 hours of biology courses are required for course enrollment.

Recent Term(s) Offered: None

ENV 491 Internship in Environmental, Health, and Safety 3 Hours

Supervised experience in an organization, facility, industry, or business with ENV responsibilities. Assignments individually arranged. Off campus travel required. Note: Permission of instructor required.

Recent Term(s) Offered: spring 2020; summer 2020; fall 2020; spring 2021; fall 2021; spring 2022

ENV 495 Environmental Measurement 3 Hours

Includes environmental measurement methods for air, soils, and water analysis. Devices covered include: AA, GC/MS, XRF, PID, SEM, colorimetric tubes, and water quality instruments.

Prerequisite(s): ENV 280 and ENV 360 and ENV 410 and ENV 480

Recent Term(s) Offered: None