PHEO - PUBLIC HLTH ENVIRO OCCU

PHEO 600 Principles of Environmental and Occupational Health
Credits 3. 3 Lecture Hours.
Overview of nature and magnitude of environmental and occupational
disease; sources of exposure, methods of monitoring and modeling
exposure; review of target organs and potential effects of specific
chemicals; discussion of workplace hazards and monitoring programs.

PHEO 603 Introduction to Environmental and Occupational Health for
Military Personnel II
Credits 3. 3 Lecture Hours.
The goal of the course is for the student to be able, given a scenario and
pertinent information, make sound management decisions and effectively
employ public health policy among military public health specialties.

PHEO 605 Chemical Hazard Exposure
Credits 3. 3 Lecture Hours.
Methods for sampling hazardous chemicals in various environmental
media; planning the sample collection; analytical process to ensure
that data quality is sufficient to meet project objectives; Data Quality
Objectives; development of a QAPP and QA/QC protocols including data
validation.

PHEO 606 Applied Health Risk Assessment: Humanitarian Settings for
Military Personnel
Credits 3. 3 Lecture Hours.
The overall goal of the course is for the student to be able, given a
scenario and pertinent information, make sound management decisions
and effectively employ public health policy.

PHEO 607 Applied Health Risk Assessment: Operational Risk
Assessment and Management for Military Personnel
Credits 3. 3 Lecture Hours.
The overall goal of the course is for the student to be able, given a
scenario and pertinent information, make sound management decisions
and effectively employ public health policy.

PHEO 610 Toxicology in Public Health
Credits 3. 3 Lecture Hours.
Concepts of toxicology in public health; emphasis on environmental
and occupation exposures; distribution, absorption, metabolism and
elimination of toxicants; mechanisms of injury at the cellular, organ
and systemic level following exposure to toxic chemicals; exposure
assessment/risk assessment for non-toxicologists and the use of
toxicology in decision-making.

PHEO 611 Environmental Health Assessment
Credits 3. 3 Lecture Hours.
This course will review methods to evaluate the public health
implications of exposures to environmental contamination. These
methods are used to determine whether people have been, are being,
or may be exposed to hazardous substances and if so, whether that
exposure is harmful, or potentially harmful, and should therefore be
stopped or reduced. Students will gain insight into the variety of tasks
associated with the environmental health assessment process.
Prerequisite: PHEO 600 and PHEB 600.

PHEO 612 Global Environmental Health
Credits 3. 3 Lecture Hours.
Review of the globalization and transformation of local problems
into international issues; environmental problems that developing
and underdeveloped countries face due to overpopulation, lack of
natural resources and lack of proper ways or technologies to dispose of
hazardous wastes.
Prerequisite: Graduate classification.

PHEO 613 Introduction to Environmental Health Disparities
Credits 3. 3 Lecture Hours.
In this online course, the students will learn about the disproportionate
burdens of environmental contamination, whether urban or rural, and
about the environmental health inequalities affecting communities of
color. The course will review the history and politics of environmental
justice movements in the U.S., and other parts of the world with a focus
on the methods and materials used in the study of environmental racism,
environmental risk, and sustainable development. This course presents
empirical evidence on distributions of environmental quality and health,
enforcement of regulations, access to resources to respond to urban,
rural, and industrial problems, and the broader political economy of
decision-making around environmental and health issues.

PHEO 614/SCSC 614 Biodegradation and Bioremediation
Credits 3. 3 Lecture Hours.
Processes affecting the biodegradation of organic chemicals in the
environment; assessment of the utility of various remedial procedures,
including biodegradation and bioremediation in site specific situations;
methods of site assessment and quantitative risk characterization.
Prerequisite: Organic chemistry or approval of instructor.
Cross Listing: SCSC 614.

PHEO 615 Environmental Measurement
Credits 3. 3 Lecture Hours.
Theory and practice of analytical methods used in the study of
environmental sciences; data quality of objectives, instrumental and
wet chemical techniques used in measurement of environmental quality
parameters and contaminants.
Prerequisite: College-level chemistry or approval of instructor.

PHEO 617 Occupational Assessment
Credits 3. 3 Lecture Hours.
This course is designed to provide students with an understanding of
occupational exposure assessment. Students will gain experience in,
sample collection for occupational settings and occupational exposure
analysis.

PHEO 618 Occupational Safety
Credits 3. 3 Lecture Hours.
This course is designed to provide students with an understanding of
occupational safety and health topics they will encounter as safety
professionals. Students will gain experience and knowledge in the
areas of construction safety, fall protection systems, aerial lift safety,
emergency response communication, hazard identification, accident
investigation techniques, OSHA regulations, their role as a safety
professional during an OSHA inspection, workers compensation, safety in
rural and developing areas and ethics in safety.
PHEO 621 Transport and Persistence of Contaminants in the Environment
Credits 3. 3 Lecture Hours.
Fundamental concepts for understanding fate, transport and persistence of contaminants in the environment; models used to estimate environmental concentrations of chemicals of human health concern; contaminant concentration and duration that affect human exposure and ecosystem health; short and long term impact of accidents of environmental and public health concern.
Prerequisite: Graduate classification.

PHEO 625 Environmental and Occupational Health Survey Methods
Credits 3. 3 Lecture Hours.
Examination of discipline specific concepts, principles and methodologies that govern environmental and occupational survey methodology.
Prerequisite: PHEO 600.

PHEO 630 Environmental/Occupational Diseases
Credits 3. 3 Lecture Hours.
Identification, evaluation and quantification of risk factors for environmental and occupational diseases, using classic and current examples of exposures involving chemical, physical and biologic agents. Selection of appropriate design and groups. Exposure assessment, including biomarkers and molecular dosimetry. Genetics, gender, age, socioeconomic and other factors affecting susceptibility.
Prerequisite: College-level mathematics.

PHEO 639 Hazardous Materials Management and Compliance
Credits 3. 3 Lecture Hours.
Types of hazardous materials; system of environmental laws governing management of hazardous materials as well as contaminants in air, water and solid waste; appropriate management and regulatory compliance; hazardous materials spills and response; hazard communication and right-to-know regulations; hazard communication benchmarking and performance criteria.

PHEO 640 Industrial Hygiene
Credits 3. 3 Lecture Hours.
Considers methods to measure and reduce workplace hazards; evaluation of engineering controls and personal protective equipment; includes potential chemical, physical, ergonomic and biological exposures. Review of major legislation affecting workplace environment.

PHEO 645 Health and Safety at Hazardous Waste Sites
Credits 3. 3 Lecture Hours.
Course covers OSHA compliance issues related to the protection of personnel engaged in on-site remediation activities. Students who satisfactorily complete the course meet the requirements for initial training under 20 CFR 1910.120 (HAZWOPER) and receive a certificate. Hands-on activities/workshops in the areas of personal protective equipment selection and use, sources of chemical information, decontamination procedures, air monitoring equipment, materials handling, and health and safety planning. Lab fee required.

PHEO 650 Risk Assessment I
Credits 3. 3 Lecture Hours.
Introduction to the general methodology of Quantitative Risk Assessment; introduction to methods of modeling exposure and selection of toxicity values, as well as risk characterization. Students utilize case studies to learn the general methods of risk assessment; also reviews the importance of and methods for risk communication and management.

PHEO 655 Human Factors And Behavior-Based Safety
Credits 3. 3 Lecture Hours.
Basic understanding of the theory and practice of human factors as well as discussion on behavior-based safety. Topics are presented within the framework of humans as functioning systems.
Prerequisite: Approval of instructor.

PHEO 670 Professional Perspectives in Environmental Health
Credits 1 to 3. 1 to 3 Lecture Hours.
The purpose of this course is to study the ethics and values of environmental public health. From a practice standpoint, we will study the 10 essential services of environmental health. We will also discuss three critical varieties of environmental ethics: conservation ethics, environmental justice, and sustainability ethics. In regards to policy, we will explore, Brownfields redevelopment, cleanup, and development and restoration policies.

PHEO 674 Environmental and Occupational Health Research Methods
Credits 3. 3 Lecture Hours.
Topics in occupational and environmental health research methods including research design, sampling, data collection, exposure assessment and measurement.
Prerequisite: PHEO 600.

PHEO 675 Water and Environmental Public Health
Credits 0 to 3. 0 to 3 Lecture Hours.
To provide a broad understanding of the elements of water and environmental public health and how these major environmental issues affect our society. It will examine water-related health issues, scientific understanding and causes and associations, and possible future approaches to understanding the major environmental health problems in developed and developing countries.

PHEO 676 Environmental Sustainability and Public Health
Credits 3. 3 Lecture Hours.
Fundamental understanding of the relationship between environmental sustainability and population. Examples include: nexus between water, energy, and food nexus influence on environmental sustainability and subsequently effect on public health.
Prerequisite: Graduate classification.

PHEO 678 Occupational Biomechanics
Credits 3. 3 Lecture Hours.
This course will focus on research methods in occupational biomechanics to understand and identify/analyse underlying risks associated with the development of work-related musculoskeletal disorders. Topics will include assessing injury risk, balance and posture control, human motion analysis, muscle activity, fatigue, and ergonomics for special populations such as the aging and obese. Students will become familiar with the use of laboratory experimental methods and existing field-friendly ergonomic evaluation techniques.

PHEO 679 Ergonomics of the Upper Extremities
Credits 3. 3 Lecture Hours.
Fundamental topics upon which models for the prevention and control of distal upper extremity disorders are constructed. Focus is on topics including human anatomy, neurophysiology, electrophysiology and worker capacity evaluation.

PHEO 681 Seminar in Environmental and Occupational Health
Credit 1. 1 Lecture Hour.
This course reviews the foundational literature on environmental and occupational health (EOH). The course will begin with an introductory look at the literature from broad topics followed by specific reviews of current departmental research topics and those found in industry. The course will also examine the application of EOH in public health research and its application to public health practice and commercialization of ideas for supporting efforts to improve environmental and occupational health.

PHEO 682 Industrial and System Safety
Credits 3. 3 Lecture Hours.
Course covers general concepts and techniques of safety upon which more detailed and advanced applications may be based. In addition, concepts will include current system safety analysis techniques, failure mode and effect and fault tree analysis, as well as economic analysis for presentation of alternative solutions for problem solving.
Prerequisite: Approval of instructor.

PHEO 684 Practicum
Credits 3 to 6. 3 to 6 Other Hours.
Field placement experience in which students work closely with a departmental faculty member and appropriate field professional(s), applying skills and techniques acquired through course work. Must be taken on a satisfactory/unsatisfactory basis.
Prerequisite: Approval of academic advisor.

PHEO 685 Directed Study
Credits 1 to 3. 1 to 3 Other Hours.
Student investigation of a topic not covered by other formal courses. May be repeated for a maximum of 6 hours total credit.
Prerequisite: Approval of student’s academic advisor.

PHEO 686 Directed Research
Credits 1 to 3. 1 to 3 Other Hours.
Student research initiative not within the scope of a thesis or dissertation. May be repeated for a maximum of 6 credits.
Prerequisite: Approval of student’s academic advisor.

PHEO 689 Special Topics In Environmental And Occupational Health
Credits 1 to 4. 1 to 4 Other Hours.
Revolving topics seminar in an area of specialization within the department. May be repeated for credit.

PHEO 691 Thesis
Credits 1 to 6. 1 to 6 Other Hours.
Research for master’s thesis. May be repeated for credit. Must be taken on a satisfactory/unsatisfactory basis.
Prerequisite: Approval of the student’s academic advisor and department head.

PHEO 791 Doctoral Capstone
Credits 1 to 9. 1 to 9 Lecture Hours.
Research for doctoral dissertation. May be repeated for credit. Must be taken on a satisfactory/unsatisfactory basis.
Prerequisites: Approval of student’s academic advisor and department head.