Occupational and Environmental Health

Head
• Peter Thorne

Graduate degrees: M.S. in occupational and environmental health; Ph.D. in occupational and environmental health
Faculty: http://www.public-health.uiowa.edu/oeh-faculty-list/
Web site: http://www.public-health.uiowa.edu/oeh/
The Department of Occupational and Environmental Health focuses on assessment of risk factors in the physical environment and their relationship to disease—particularly health problems of agricultural and industrial workers. Students are guided by faculty members whose research interests include rural health care delivery, agricultural health, environmental health, occupational medicine, occupational lung disease, mammalian toxicology, inhalation toxicology, ergonomics, indoor air quality, occupational injury, injury epidemiology, injury prevention programs, aerosol physics, air and water quality, environmental chemistry, analytical toxicology, and environmental health in developing countries.

Graduate Programs of Study
• Master of Science in occupational and environmental health
• Doctor of Philosophy in occupational and environmental health

Both of the department's graduate degree programs offer optional subprograms in agricultural safety and health, and industrial hygiene.

In addition to its degree programs, the department offers the Master of Public Health with a subprogram in occupational and environmental health; see "M.P.H. Subprograms" below. It also offers the College of Public Health's graduate Certificate in Agricultural Safety and Health; see Agricultural Safety and Health in the Catalog.

The department collaborates with the Department of Biomedical Engineering (College of Engineering) and the School of Urban and Regional Planning (Graduate College) to offer joint degree programs; see "Joint B.S.E. in Biomedical Engineering/M.S." and "Joint M.S./M.A. or M.S. in Urban and Regional Planning" below.

The department also offers an occupational medicine residency training program.

Master of Science
The Master of Science program in occupational and environmental health requires a minimum of 38 s.h. of graduate credit. It is offered with two optional subprograms: agricultural safety and health and industrial hygiene. The M.S. with agricultural safety and health subprogram requires a minimum of 39 s.h. of graduate credit; the M.S. with industrial hygiene subprogram requires a minimum of 43 s.h. of graduate credit. All M.S. students are required to complete a thesis.

The M.S. in occupational and environmental health without a subprogram requires the following work.

CORE COURSES
Students must complete all of the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEH:4240</td>
<td>Global Environmental Health</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>OEH:5010</td>
<td>Occupational and Environmental Health Seminar</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>OEH:5620</td>
<td>Occupational Health</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>OEH:5710</td>
<td>Environmental Toxicology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:5110</td>
<td>Introduction to Biostatistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPID:4400</td>
<td>Epidemiology I: Principles</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GRAD:7270</td>
<td>Principles of Scholarly Integrity</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>MPH:6100</td>
<td>Essentials of Public Health</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>PATH:8133</td>
<td>Introduction to Human Pathology for Graduate Students</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

ELECTIVES
Credit earned in elective courses and the thesis completes the 38 s.h. required for the degree. Students work with their advisors to select electives appropriate for their professional goals.

THESIS
A thesis is required. Students may earn a maximum of 6 s.h. for the thesis. Additional thesis credit may be allowed for students who earn more than 38 s.h.


M.S. with Subprogram in Agricultural Safety and Health
The M.S. with subprogram in agricultural safety and health requires a minimum of 39 s.h. of graduate credit. The program prepares students for careers in education, health care, insurance, and agribusiness as specialists in agricultural safety and health.

The M.S. in occupational and environmental health with the agricultural safety and health subprogram requires the following work.

SUBPROGRAM CORE
Students must complete all of the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEH:4240</td>
<td>Global Environmental Health</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>OEH:4540</td>
<td>Statistics for Experimenters</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>OEH:5010</td>
<td>Occupational and Environmental Health Seminar</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>OEH:5410</td>
<td>Occupational Safety</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>OEH:5620</td>
<td>Occupational Health</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>OEH:5710</td>
<td>Environmental Toxicology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>OEH:6110</td>
<td>Rural Health and Agricultural Medicine</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>OEH:6120</td>
<td>Current Topics in Agriculture and Rural Health</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>OEH:7040</td>
<td>Preceptorship in Occupational and Environmental Health</td>
<td>arr.</td>
</tr>
<tr>
<td>EPID:4400</td>
<td>Epidemiology I: Principles</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
Joint B.S.E. in Biomedical Engineering/M.S.

Bachelor of Science in Engineering students majoring in biomedical engineering (musculoskeletal biomechanics track) who are interested in earning a Master of Science in occupational and environmental health (industrial hygiene subprogram) may apply to the joint B.S.E./M.S. program offered by the College of Engineering and the College of Public Health. The joint program permits students to count a limited amount of credit toward the requirements of both degrees, enabling them to begin the study of public health before they complete the bachelor's degree. For information about the B.S.E. program, see Biomedical Engineering (College of Engineering) in the Catalog.

Joint M.S./M.A. or M.S. in Urban and Regional Planning

The joint Master of Science in occupational and environmental health/Master of Arts or Master of Science in urban and regional planning requires 65 s.h. of graduate credit. Separate application to each degree program is required; applicants must be admitted to both programs before they may be admitted to the joint degree program. For information about the graduate programs in planning, see Urban and Regional Planning (Graduate College) in the Catalog.

M.P.H. Subprograms

The Department of Occupational and Environmental Health offers the Master of Public Health with a subprogram in occupational and environmental health. The subprogram provides students with a broad perspective on public health and career preparation for a variety of professional positions in occupational and environmental health. Students have the option of selecting focused course work in the following areas: global environmental health, occupational health, rural health and safety, injury and violence prevention, and environmental and occupational epidemiology.

For detailed information about the M.P.H. degree, see Master of Public Health Program in the Catalog.

Doctor of Philosophy

The Doctor of Philosophy program in occupational and environmental health requires 72 s.h. of graduate credit. All doctoral students must complete a dissertation. The program prepares students for professional and academic careers in environmental and occupational health. It is offered with two optional subprograms: agricultural safety and health, and industrial hygiene.

The Ph.D. in occupational and environmental health without a subprogram requires the following work.

CORE COURSES

Students must complete all of the following courses.

- OEH:4240 Global Environmental Health 3 s.h.
- OEH:4310 Occupational Ergonomics I 3 s.h.
- OEH:4540 Statistics for Experimenters 3 s.h.
- OEH:5010 Occupational and Environmental Health Seminar (taken three times, twice for 0 s.h. and once for 1 s.h.)
- OEH:5410 Occupational Safety 3 s.h.
- OEH:5620 Occupational Health 3 s.h.
- OEH:5710 Environmental Toxicology 3 s.h.
- OEH:6420 Industrial Hygiene Fundamentals 3 s.h.
- OEH:6430 Assessing Physical Agent Hazards 3 s.h.
- OEH:6440 Control of Occupational Hazards 3 s.h.
- OEH:6450 Aerosol Technology 3 s.h.
- EPID:4400 Epidemiology I: Principles 3 s.h.
- GRAD:7270 Principles of Scholarly Integrity 0 s.h.
- MPH:6100 Essentials of Public Health 1 s.h.

ELECTIVES

Credit in elective courses and the thesis completes the 43 s.h. required for the degree. Students work with their advisors to select electives appropriate for their professional goals.

THESIS

A thesis is required. Students may earn a maximum of 6 s.h. for the thesis.

BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.
EPID:4400 Epidemiology I: Principles 3 s.h.
GRAD:7270 Principles of Scholarly Integrity 1 s.h.
MPH:6100 Essentials of Public Health 1 s.h.
PATH:8133 Introduction to Human Pathology for Graduate Students 4 s.h.

ELECTIVES
Students must earn a minimum of 24 s.h. in non-research-related courses, including classroom courses or equivalent web-based courses. Students work with their advisors to select courses appropriate for their professional goals.

RESEARCH CREDIT
Students earn the remaining credit for the Ph.D. by completing any combination of the following courses or other classroom courses. All Ph.D. students must complete a dissertation.

OEH:7020 Independent Study in Occupational and Environmental Health arr.
OEH:7030 Research in Occupational and Environmental Health arr.

Ph.D. with Subprogram in Agricultural Safety and Health
The Ph.D. with subprogram in agricultural safety and health prepares doctoral students for academic, research, and policy-making careers in occupational and environmental health, with specialty in agricultural safety and health.

The Ph.D. in occupational and environmental health with the agricultural safety and health subprogram requires the following work.

SUBPROGRAM CORE
Students must complete all of the following courses.

OEH:4240 Global Environmental Health 3 s.h.
OEH:4310 Occupational Ergonomics I 3 s.h.
OEH:4540 Statistics for Experimenters 3 s.h.
OEH:5010 Occupational and Environmental Health Seminar (taken three times, twice for 0 s.h. and once for 1 s.h.) 3 s.h.
OEH:5410 Occupational Safety 3 s.h.
OEH:5620 Occupational Health 3 s.h.
OEH:5710 Environmental Toxicology 3 s.h.
OEH:6420 Industrial Hygiene Fundamentals 3 s.h.
OEH:6430 Assessing Physical Agent Hazards 3 s.h.
OEH:6440 Control of Occupational Hazards 3 s.h.
OEH:6450 Aerosol Technology 3 s.h.
OEH:6460 Quantitative Exposure Assessment: Study Design and Evaluation 3 s.h.
BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.
EPID:4400 Epidemiology I: Principles 3 s.h.
EPID:5570 Zoonotic Diseases 2 s.h.
GRAD:7270 Principles of Scholarly Integrity 1 s.h.
MPH:6100 Essentials of Public Health 1 s.h.

ELECTIVES
Agricultural safety and health subprogram students must complete elective course work from one of four focus areas. The amount of credit required varies by focus area, as follows.

Industrial hygiene: 15 s.h.
Ergonomics: 15 s.h.
Occupational epidemiology: 12 s.h.
Occupational injury prevention: 12 s.h.

Ph.D. with Subprogram in Industrial Hygiene
The Ph.D. with subprogram in industrial hygiene provides doctoral students with specialized knowledge in industrial hygiene in addition to their expertise in the broad field of occupational and environmental health.

The Ph.D. in occupational and environmental health with the industrial hygiene subprogram requires the following work.

SUBPROGRAM CORE
Students must complete all of the following courses.

OEH:4240 Global Environmental Health 3 s.h.
OEH:4310 Occupational Ergonomics I 3 s.h.
OEH:5010 Occupational and Environmental Health Seminar (taken three times, twice for 0 s.h. and once for 1 s.h.) 3 s.h.
OEH:5410 Occupational Safety 3 s.h.
OEH:5620 Occupational Health 3 s.h.
OEH:5710 Environmental Toxicology 3 s.h.
OEH:6420 Industrial Hygiene Fundamentals 3 s.h.
OEH:6430 Assessing Physical Agent Hazards 3 s.h.
OEH:6440 Control of Occupational Hazards 3 s.h.
OEH:6450 Aerosol Technology 3 s.h.
OEH:6460 Quantitative Exposure Assessment: Study Design and Evaluation 3 s.h.
BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.
EPID:4400 Epidemiology I: Principles 3 s.h.
GRAD:7270 Principles of Scholarly Integrity 1 s.h.
MPH:6100 Essentials of Public Health 1 s.h.

One of these:

OEH:4540 Statistics for Experimenters 3 s.h.
BIOS:5110 Introduction to Biostatistics 3 s.h.

ELECTIVES
Students must earn a minimum of 12 s.h. in non-research-related courses, including classroom courses or equivalent web-based courses. Students work with their advisors to select courses appropriate for their professional goals.
web-based courses. Students work with their advisors to select courses appropriate for their professional goals.

**RESEARCH CREDIT**

Students earn the remaining credit for the Ph.D. by completing any combination of the following courses or other classroom courses. All Ph.D. students must complete a dissertation.

- OEH:7020 Independent Study in Occupational and Environmental Health arr.
- OEH:7030 Research in Occupational and Environmental Health arr.

**Admission**

Applicants to the M.S. and Ph.D. programs in occupational and environmental health must apply through the Schools of Public Health Application Service (SOPHAS); they also must apply for admission to the Graduate College through the University of Iowa Office of Admissions. For detailed application information, visit Prospective Students/How to Apply on the Department of Occupational and Environmental Health web site.

The occupational and environmental health faculty takes several factors into consideration when evaluating applications for admission, including Graduate Record Exam (GRE) General Test scores, grade-point averages, letters of recommendation, intent and motivation for graduate study, and research interests. A student with deficiencies in one area may be admitted if all other components of his or her application are very strong.

All M.S. and Ph.D. program applicants must hold a bachelor's degree and have a cumulative g.p.a. of at least 3.00 (M.S. applicants) or at least 3.25 (Ph.D. applicants). All applicants must have taken the Graduate Record Exam (GRE) General Test. A verbal score of at least 151 and a quantitative score of at least 152 are recommended. For applicants who have not taken the GRE, the department considers scores from other standardized tests, such as the Medical College Admission Test (MCAT).

Applicants whose first language is not English and who do not hold a bachelor's degree from an accredited institution in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL). Applicants who score 81-99 (Internet-based) are required to take English fluency courses. Applicants who score below 81 are not considered for admission.

Undergraduate preparation for M.S. applicants must include course work in mathematics, biology, chemistry, and either physical sciences or engineering, depending on the applicant's chosen specialty area.

M.S. applicants who intend to pursue the industrial hygiene subprogram also must have taken physics and mathematics through calculus; course work in biology, microbiology, and computer programming is highly recommended.

Completion of the M.S. program before beginning Ph.D. study is recommended. Undergraduate preparation for doctoral applicants must include at least two semesters of chemistry, one semester of physics, and one semester of calculus. Course work in biology, microbiology, and computer programming is highly recommended, particularly for students interested in some specialized areas.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Students may enter the department's graduate programs in the fall. February 1 is the priority application deadline for consideration for financial support; May 1 is the final application deadline.

**Financial Support**

Several graduate student awards, including tuition and stipend support, are available for individuals interested in industrial hygiene, agricultural safety and health, ergonomics, occupational epidemiology, or occupational injury prevention. Both stipend and tuition support are available for all occupational medicine residents. Full-time graduate students in good academic standing (those not admitted on conditional status) are eligible for a stipend and tuition support. All other students are eligible for tuition support only; requests are considered case-by-case. All recipients must be U.S. citizens or permanent residents.

**POSTDOCTORAL POSITIONS**

The College of Public Health’s Environmental Health Sciences Training Program offers postdoctoral positions in environmental health/toxicology. Appointments are made for two years with the possibility of an additional year. Applicants must be U.S. citizens or permanent residents.

**Residency Program**

In cooperation with University of Iowa Hospitals and Clinics, the department offers residency training in occupational medicine for physicians seeking specialty training in occupational medicine. For information contact the director of the Occupational Medicine Residency Program.

**Facilities and Resources**

The Department of Occupational and Environmental Health is housed in the College of Public Health Building, on the University's health sciences campus, and at the Institute for Rural and Environmental Health, at the University of Iowa Research Park. College of Public Health-based laboratory facilities give researchers and students access to cutting-edge technologies for the study of occupational and environmental health.

The Inhalation Toxicology Facility provides a full array of inhalation toxicology, aerosol science, and bioaerosol assay services. A primary focus of the facility is the study of toxicants found in the agricultural environment and related exposure situations. The facility is particularly well-equipped for studying organic dusts and bioaerosols.

The Occupational Hygiene Laboratory provides expertise and equipment for exposure assessment in occupational settings. The laboratory offers a range of sample collection capabilities and an extensive inventory of sampling equipment. Field and laboratory services are available through laboratory support exposure-response studies and control technology development studies in a variety of occupational arenas, including agriculture, construction, and indoor environments (home and office).
A computer laboratory is available for student use, and a library collection is located at the Institute for Rural and Environmental Health.

**Heartland Center for Occupational Health and Safety**

The Heartland Center for Occupational Health and Safety, one of 17 education and research centers funded by the National Institute of Occupational Safety and Health, provides training, education, and outreach. Its program areas are industrial hygiene, occupational medicine, ergonomics, agricultural safety and health, occupational injury prevention, occupational epidemiology, and continuing education.

**Courses**

- **OEH:3210 Health, Work, and the Environment** 3 s.h.
  Current topics in occupational and environmental health; how the United States protects workers, protects people from environmental agents, and reduces environmental harm. Same as GEOG:3210.

- **OEH:4210 International Health** 3 s.h.
  Urgent health problems in the developing world and among disadvantaged populations in developed countries; biological, social, cultural, political aspects of international health problems; applications of research methods from epidemiology, environmental health, social sciences. Same as GHS:4210, EPID:4210.

- **OEH:4220 U.S. and Global Environmental Health Policy** 3 s.h.
  Major concerns in environment and human health, legislation enacted to deal with these concerns; emphasis on contemporary issues. Offered fall semesters of odd years. Requirements: for OEH:4220 — OEH:4240; for CEE:4220 — CEE:2150. Same as CEE:4220, GHS:4220.

- **OEH:4240 Global Environmental Health** 3 s.h.
  Environmental health comprised of aspects of human health determined by interactions with physical, chemical, biological, and social factors in global environment; worldview and survey; focus on issues most relevant today; sustainability; air, water, and soil pollution and remediation; occupational health; injury prevention; food safety and security; risk assessment; environmental health policy.

- **OEH:4260 Global Water and Health** 3 s.h.
  Overview of global water and health; microbial and toxicant identification, water-related adverse health effects, risk assessment, approaches to reduce water-related disease, distal water-related influences (e.g., global warming), and historic cases.

- **OEH:4310 Occupational Ergonomics I** 2-3 s.h.
  Principles of ergonomics, with focus on physical capabilities of workers and their interactions with their work environment; physiological basis of work, patterns of work, occupational risk factors for musculoskeletal and neurovascular disorders, workplace and equipment design, integration of ergonomics in manufacturing processes.

- **OEH:4510 Injury and Violence Prevention** 3 s.h.
  Theory, research, and practice of injury control; unintentional and intentional injuries; local, national, international injury issues. Same as EPID:4510.

- **OEH:4520 Research Methods in Disaster Studies** 3 s.h.
  Epidemiologic study of disasters and their health consequences; research to identify and reduce health effects, research in context of response and preparedness. Same as EPID:4520, GHS:4275.

- **OEH:4530 Global Road Safety** 2 s.h.
  Road safety problem, data sources, research methods used in field, and how intervention and prevention programs are developed and evaluated; lecture, hands-on approaches.

- **OEH:4540 Statistics for Experimenters** 3 s.h.
  Application of statistical techniques to evaluate data derived from experimental samples designs; use of spreadsheets, statistical software; design and analysis of experiments; regression analysis; model building; practical applications. Same as CEE:4187.

- **OEH:4920 Solid and Hazardous Wastes** 3 s.h.

- **OEH:5010 Occupational and Environmental Health Seminar** 0-1 s.h.
  Contemporary topics in occupational health, agricultural and comparative medicine, environmental health.

- **OEH:5120 Veterinary Public Health: The Profession** 1 s.h.
  History and overview of veterinary public health and the American College of Veterinary Preventive Medicine (ACVPM); preparation for ACVPM board of certification.

- **OEH:5410 Occupational Safety** 3 s.h.
  Principles and practices of occupational safety; applications in industrial and other occupational settings; interactions with other disciplines.

- **OEH:5530 Interpreting Occupational and Environmental Health Research** 2 s.h.
  Tools necessary for making critical assessment of published scientific research reports from a methodological perspective; examples from recently published research studies in occupational and environmental health. Corequisites: BIOS:5110 and EPID:4400.

- **OEH:5620 Occupational Health** 3 s.h.
  Principles, practice of occupational medicine, fundamentals of industrial hygiene and safety, occupational health management, ergonomics, occupational health nursing. Offered fall semesters.
OEH:5710 Environmental Toxicology 3 s.h.
Sources, routes of absorption, effects of environmental toxicants affecting man; pathophysiology of toxicant actions, including those of air and water pollutants, metals, pesticides, solvents, food toxicants, chemicals. Requirements: college chemistry or physiology or biochemistry.

OEH:6110 Rural Health and Agricultural Medicine 3 s.h.
Clinical orientation of specific health problems of rural residents, agricultural workers; rural health care delivery, socioeconomic issues in agriculture and their effects on health and safety of the agricultural population; occupational health problems, environmental health hazards in rural areas. Requirements: enrollment in College of Public Health or health sciences.

OEH:6120 Current Topics in Agriculture and Rural Health 0-1 s.h.
Issues that affect the health of agricultural populations, such as agro-terrorism, antibiotic resistance, genetically modified organisms; current scientific literature.

OEH:6130 Agricultural Safety and Health: Practice, Research Methods, and Policy 3 s.h.
Comprehensive overview of regional, national, and global agricultural production and associated public health hazards; solutions to identified hazards. Corequisites: OEH:6110, if not taken as a prerequisite.

OEH:6310 Clinical Ergonomics 3 s.h.
Clinical orientation to specific ergonomic problems and issues; preparation for conducting independent on-site ergonomic evaluations in occupational settings; experience developing and evaluating ergonomic inventions in an occupational setting; rotation through an occupational medicine clinic. Prerequisites: OEH:4310.

OEH:6320 Occupational Ergonomics II 3 s.h.
Application of ergonomic principles in varied work settings, through case study approach; participatory ergonomics, economics of ergonomics, workforce issues, psychosocial factors, shift work, integration of ergonomics into business models, current legislative issues, legal aspects of ergonomics, international perspectives; biomedical instrumentation used for risk factor exposure measurements.

OEH:6420 Industrial Hygiene Fundamentals 3 s.h.
Principles, with emphasis on recognition of chemical health hazards, physical health hazards at work. Corequisites: OEH:5620, if not taken as a prerequisite.

OEH:6430 Assessing Physical Agent Hazards 3 s.h.
Basic principles of recognizing and evaluating hazards presented by physical agents in occupational environments. Prerequisites: OEH:6420.

OEH:6440 Control of Occupational Hazards 3 s.h.
Physical science concepts applied to control of occupational hazards ranging from dusts to mists to vapors; strategies, management issues, personal protective equipment, implementation skills; in-depth instruction on local exhaust ventilation system design. Prerequisites: OEH:6420.

OEH:6450 Aerosol Technology 3 s.h.
Particle statistics and physics of aerosols, including inertia, diffusion, nucleation, evaporation, condensation, optics, electrical properties; relationship to fields such as agriculture, nanotechnology, environmental and occupational health, atmospheric chemistry, drug delivery.

OEH:6460 Quantitative Exposure Assessment: Study Design and Evaluation 3 s.h.
Principles of designing occupational and environmental exposure assessment studies, analyzing exposure data, and conducting exposure-response evaluations. Prerequisites: BIOS:5110 or OEH:4540.

OEH:6510 Environmental and Occupational Epidemiology 3 s.h.
Overview of methods to interpret and perform environmental and occupational epidemiologic studies with focus on exposure assessment; valuable insights into identifying regional, national, global environmental, and occupational health-related issues. Prerequisites: EPID:4400. Same as EPID:6200.

OEH:6520 Injury Epidemiology 3 s.h.
How epidemiology can be applied to injury prevention and control: epidemiology literature, specific methodological problems involved in the epidemiology of injuries, critical evaluation of research articles. Offered spring semesters of odd years. Prerequisites: EPID:4400. Same as EPID:6510.

OEH:6530 Epidemiology of Occupational Injuries 3-4 s.h.
Epidemiological literature on occupational injuries and their prevention; focus on research methods. Offered spring semesters of even years. Prerequisites: EPID:4400. Same as EPID:6530.

OEH:6610 Advanced Topics in Occupational Medicine 2 s.h.
Skills and knowledge for evaluating and treating patients with work-related illness.

OEH:6720 Advanced Toxicology 4 s.h.
Hepatic metabolism and toxification mechanisms, pulmonary and immunotoxicology, nervous system poisons and their mechanisms of action, general and molecular concepts of chemical carcinogenesis. Prerequisites: OEH:5710.


OEH:7010 Problems in Occupational and Environmental Health arr.
Didactic material in occupational and environmental health; may include tutorial, seminar, faculty-directed independent work (e.g., literature search, project, short research project).

**OEH:7020 Independent Study in Occupational and Environmental Health**
In-depth pursuit of an area in occupational and environmental health requiring substantial creativity and independence.

**OEH:7030 Research in Occupational and Environmental Health**
Research that may lead to a dissertation.

**OEH:7040 Preceptorship in Occupational and Environmental Health**
Work experience using knowledge and skills acquired in the classroom; arranged in conjunction with departmental or collegiate activities or with governmental agencies or private industry.

**OEH:8610 Occupational Medicine**
In-depth study of an area in occupational and environmental medicine, with clinical experience in an outpatient community setting. Four-week course.
Requirements: M.D. enrollment.