

## Competencies

### PhD and ScD – Occupational and Environmental Health Department of Environmental Health Sciences

#### 1. Achieve competence in the scientific and policy domains of occupational and environmental health

			Evaluation Opportunities										
Specific Competencies	Learning Opportunities		Course Work/Exam	Written Comps	Dept Preliminary Orals	School Preliminary Orals	Thesis	Final Defense	Public Thesis Presentation	Non-Thesis Research	Annual Advisor Review	Research Committee Review	Divisional Seminar and Journal Club Participation
Demonstrate knowledge of areas relevant to occupational and environmental health, including epidemiology and biostatistics, toxicology, industrial hygiene, occupational safety, health policy and administration, environmental law, and labor-management relations	<a href="#">140.621-3</a> Statistical Methods in Public Health I-III <a href="#">180.601</a> Environmental Health <a href="#">180.609-10</a> Principles of Environmental Health I-II <a href="#">180.629</a> Environmental and Occupational Health Law and Policy <a href="#">182.625</a> Principles of Industrial Hygiene <a href="#">187.610</a> Principles of Toxicology <a href="#">188.680</a> Fundamentals of Occupational Health <a href="#">188.681</a> Occupational Health <a href="#">340.601</a> Principles of Epidemiology <a href="#">340.602</a> Intermediate Epidemiology Additional Elective Courses (see next page) Occupational and Environmental Health Seminar, Journal Club, and Grand Rounds Thesis	X	X	X	X	X	X	X	X		X	X	X

**PhD and ScD – Occupational and Environmental Health  
Department of Environmental Health Sciences**

**1. Achieve competence in the scientific and policy domains  
of occupational and environmental health, continued**

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Demonstrate knowledge of major occupational and environmental diseases, including causes, diagnosis and treatment, methods of monitoring, surveillance and prevention	<a href="#">180.601</a> Environmental Health <a href="#">180.609-10</a> Principles of Environmental Health I-II <a href="#">188.680</a> Fundamentals of Occupational Health <a href="#">188.684</a> Occupational and Environmental Medicine Additional Elective Courses Occupational and Environmental Health Seminar, Journal Club, and Grand Rounds Thesis	X	X	X	X	X	X	X		X	X	X

**Electives**

**Courses with Emphasis in Occupational Health**

- [182.621](#) Introduction to Ergonomics
- [182.623](#) Occupational Safety and Health Management
- [182.631](#) Principles of Occupational Safety
- [188.681](#) Occupational Health
- [188.684](#) Occupational and Environmental Medicine
- [188.694](#) Advanced Topics in Occupational Health Nursing

**Courses with Emphasis in Environmental Health**

- [180.611](#) The Global Environment and Public Health
- [180.629](#) Environmental and Occupational Health Law and Policy
- [180.631](#) Environmental and Occupational Health Policy Seminar
- [182.638](#) Fundamentals Water Quality Engineering for Public Health
- [182.640](#) Food- and Water-Borne Diseases
- [183.641](#) The Health Effects of Indoor and Outdoor Air Pollution

**Risk Sciences Series**

- [317.600](#) Introduction to Risk Sciences and Public Policy
- [317.605](#) Methods in Quantitative Risk Assessment
- [317.610](#) Risk Policy, Management, and Communication
- [317.615](#) Topics in Risk Assessment

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Specific Competencies	Learning Opportunities	Course Work/Exam	Written Comps	Dept Preliminary Orals	School Preliminary Orals	Thesis	Final Defense	Public Thesis Presentation	Non-Thesis Research	Annual Advisor Review	Research Committee Review	Divisional Seminar and Journal Club Participation
Demonstrate knowledge of elements of the workplace and general environment and their interactions, including industrial processes, demography of the population, and physical, chemical, biological, and psychological hazards of the environment	<a href="#">180.611</a> The Global Environment and Public Health <a href="#">182.621</a> Introduction to Ergonomics <a href="#">182.625</a> Principles of Industrial Hygiene <a href="#">182.631</a> Principles of Occupational Safety <a href="#">182.640</a> Food- and Water-Borne Diseases <a href="#">183.641</a> The Health Effects of Indoor and Outdoor Air Pollution <a href="#">188.680</a> Fundamentals of Occupational Health <a href="#">188.681</a> Occupational Health <a href="#">188.684</a> Occupational and Environmental Medicine Additional Elective Courses Occupational and Environmental Health Seminar, Journal Club, and Grand Rounds Thesis	X	X	X	X	X	X	X		X	X	X
Demonstrate an ability to understand and evaluate major types of occupational and environmental health standards — including their limitations and implications for maintenance of health — and to have knowledge of the standard-setting process	<a href="#">180.601</a> Environmental Health <a href="#">180.609-10</a> Principles of Environmental Health I-II <a href="#">180.629</a> Environmental and Occupational Health Law and Policy <a href="#">182.625</a> Principles of Industrial Hygiene <a href="#">188.680</a> Fundamentals of Occupational Health <a href="#">188.681</a> Occupational Health Additional Elective Courses Occupational and Environmental Health Seminar, Journal Club, and Grand Rounds Thesis	X	X	X	X	X	X	X		X	X	X

**PhD and ScD – Occupational and Environmental Health  
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**2. Apply skills from the scientific and policy domains to expand the knowledge base of etiology, diagnosis, and prevention of occupational and environmental diseases; and effectively disseminate that knowledge**

**Evaluation Opportunities**

Specific Competencies	Learning Opportunities	Course Work/Exam	Written Comps	Dept Preliminary Orals	School Preliminary Orals	Thesis	Final Defense	Public Thesis Presentation	Non-Thesis Research	Annual Advisor Review	Research Committee Review	Divisional Seminar and Journal Club Participation
Demonstrate skill in communicating the general concepts of occupational and environmental health in both written and oral presentations	<a href="#">180.601</a> Environmental Health <a href="#">180.609-10</a> Principles of Environmental Health I-II <a href="#">180.611</a> The Global Environment and Public Health <a href="#">180.629</a> Environmental and Occupational Health Law and Policy <a href="#">182.625</a> Principles of Industrial Hygiene <a href="#">188.680</a> Fundamentals of Occupational Health Additional Elective Courses Occupational and Environmental Health Journal Club Thesis Final Defense and Public Thesis Presentation	X	X	X	X	X	X	X				X
Recognize deficiencies in the research literature and critically evaluate both work in progress and published reports	<a href="#">180.601</a> Environmental Health <a href="#">180.609-10</a> Principles of Environmental Health I-II <a href="#">180.611</a> The Global Environment and Public Health <a href="#">180.640</a> Molecular Epidemiology and Biomarkers in Public Health <a href="#">188.680</a> Fundamentals of Occupational Health <a href="#">188.684</a> Occupational and Environmental Medicine Additional Elective Courses Occupational and Environmental Health Seminar, Journal Club, and Grand Rounds Thesis	X				X	X	X		X		X

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**2. Apply skills from the scientific and policy domains to expand the knowledge base of etiology, diagnosis, and prevention of occupational and environmental diseases; and effectively disseminate that knowledge, continued**

**Evaluation Opportunities**

Specific Competencies	Learning Opportunities	Course Work/Exam	Written Comps	Dept Preliminary Orals	School Preliminary Orals	Thesis	Final Defense	Public Thesis Presentation	Non-Thesis Research	Annual Advisor Review	Research Committee Review	Divisional Seminar and Journal Club Participation
Recognize and develop occupational and environmental health hypotheses that can be quantified and tested	<a href="#">180.601</a> Environmental Health <a href="#">180.609-10</a> Principles of Environmental Health I-II <a href="#">180.640</a> Molecular Epidemiology and Biomarkers in Public Health <a href="#">340.618</a> Occupational Epidemiology <a href="#">340.637</a> Environmental Epidemiology <a href="#">340.664</a> Introduction to Genetic Epidemiology <a href="#">340.705</a> Advanced Seminar in Social Epidemiology Thesis	X				X	X	X		X	X	
Demonstrate knowledge and ability in the application of research methodology, including design, techniques, analysis, and interpretation	<a href="#">180.640</a> Molecular Epidemiology and Biomarkers in Public Health <a href="#">306.665</a> Research Ethics and Integrity <a href="#">550.860</a> Research Ethics <a href="#">550.865</a> Public Health Perspectives on Research Laboratory or Field Epidemiology Experience Thesis	X				X	X	X	X		X	
Design, conduct, analyze and interpret research related to occupational or environmental disease	Laboratory or Field Epidemiology Experience Thesis					X	X	X	X		X	