UIC School of Public Health Student Handbook 2006-2007

PhD Degree Requirements for the Community Health Sciences Division

In addition to the general program requirements of the Graduate College and of the School of Public Health, Community Health Sciences requires the following. Students should refer to the CHS Student Handbook as well.

1. PhD students in Community Health Sciences must complete all of the SPH requirements for the PhD degree. However, rather than EPID 400, students must take EPID 403. In addition, students must take CHSC 400 and CHSC 551 and select either HPA 400, EOHS 400 or CHSC 401.
2. PhD students must select a major area of concentration in which at least 9 semester hour credits are completed at the 500-level. Advisor approval is necessary for elective course selection.
3. In addition, PhD students must select a collateral area in which at least six semester hours are completed at the 500 level. The student will be tested in the collateral area as part of the preliminary examination. PhD students with a concentration in Maternal and Child Health Epidemiology have additional requirements.

PhD Degree Requirements for the Environmental and Occupational Health Sciences Division

PhD CORE • DIVISION CORE • ELECTIVES • CAPSTONE REQUIREMENT • ENVIRONMENTAL AND OCCUPATIONAL HEALTH PERSPECTIVE

PhD Core

EPID 403 Introduction to Epidemiology: Principles and Methods (3 sh)

BSTT 400 Biostatistics I (3 sh)

BSTT 401 Biostatistics II (4 sh)

Sub-total 10 sh

Division Core

All students are required to take at least one course in each of the following three areas:

Exposure Assessment and Measurement

EOHS 405 Environmental Calculations (2 sh)

EOHS 440 Chemistry for Environmental Professionals (3 sh)

EOHS 421 Fundamentals of Industrial Hygiene (2 sh)

EOHS 418 Analysis of Water and Wastewater Quality (2 sh)

EOHS 428 Industrial Hygiene Laboratory I (2 sh)

EOHS 438 Air Quality Laboratory (2 sh)

EOHS 542 Water Chemistry (3 sh)

EOHS 543 Environmental Organic Chemistry (3 sh)

EOHS 557 Design and Analysis of Experiments (4 sh)

EOHS 564 Geographic Information System Applications in Public Health (3 sh)

EOHS 565 - Datamining Applications in Public Health (3 sh)

Health Assessment

EOHS 450 Principles of Occupational/Environmental Medicine (2 sh)

EOHS 455 Environmental and Occupational Toxicology (3 sh)

EOHS 551 Occupational Diseases (4 sh)

EOHS 554 Occupational and Environmental Epidemiology (2 sh)

EOHS 555 Advanced Toxicology (3 sh)

Intervention Strategies

EOHS 408 Biological, Chemical, Explosives, and Nuclear Weapons as Public Health Threats (3 sh)

EOHS 411 Water Quality Management I (4 sh)

EOHS 431 Air Quality Management I (3 sh)

EOHS 461 Community Health and Consumer Protection (2 sh)

EOHS 482 Occupational Safety Science (2 sh)

EOHS 556 Risk Assessment in Environmental and Occupational Health (3 sh)

EOHS 572 Environmental Risk Management (4 sh)

Sub-total 12 sh

Electives

Students should select courses with their advisor in a discipline of interest. At least 9 sh of coursework in the student's discipline must be at the 500 level. At least 6 sh of coursework in a collateral area is required.

Capstone Requirement

A capstone experience is required of all students in EOHS. For students in the PhD program, the capstone experience is the PhD research (IPHS 599) and written dissertation.

Sub-total 32 sh

Program Total: 96 sh

Environmental and Occupational Health Perspective for PhD Students

To accomplish the school wide objectives in the context of environmental and occupational health sciences, the PhD student is expected to identify and master an appropriate web of theoretical perspectives and research methods in both a major and collateral area along with the capacity to communicate and work with researchers and professionals in a wide variety of disciplines.

PhD Degree Requirements for the Epidemiology and Biostatistics Division

EPIDEMIOLOGY • BIOSTATISTICS

Epidemiology

Minimum credit hour requirement: 99 sh

SPH Core Course Requirement (may be waived if taken previously)

EPID 403 Introduction to Epidemiology: Principles and Methods (3 sh)

BSTT 400 Biostatistics I (3 sh)

BSTT 401 Biostatistics II (4 sh)

In addition to the 10 sh of core PhD course requirements, students in Epidemiology must take the following courses:

Epidemiology Requirements (20 sh)

EPID 406 Epidemiologic Computing (3 sh)

EPID 404 Intermediate Epidemiologic Methods (4 sh)

EPID 410 Epidemiology of Infectious Diseases (2 sh)

EPID 411 Epidemiology of Chronic Disease (3 sh)

EPID 501 Advanced Quantitative Methods in Epidemiology (3 sh)

EPID 591 Current Epidemiologic Literature (2 sh)

EPID 595 Research Seminar (1 sh)

Choose one:

BSTT 430 Design of Clinical Trials (3 sh)

-or-

BSTT 440 Sampling and Estimation Methods (3 sh)

Electives 36 sh (minimum)

- Two 500-level substantive Epidemiology classes, in different areas, to prepare for substantive sections of preliminary examination (e.g. Cardiovascular, Cancer, Aging, Infectious, Pediatrics, Genetics). (4-6 sh)
- At least one biological science class relevant to student's research area is required if no prior biological sciences background. (4 sh)
- Additional coursework in relevant area outside of Epidemiology (6 sh)
- Remaining electives (20-22 sh)

Dissertation Research 32 sh (min.)

- Research in the Public Health Sciences - PhD (IPHS 599)
- Dissertation research milestones: Preliminary Examination, Dissertation Proposal Approval, and Dissertation Defense

PROGRAM TOTAL 99 sh (min.)

Any specific course requirement may be waived on the basis of previous course work or experience. Please refer to the section on Academic Policies and Standards for course waiver rules and procedure.

Credit for Prior Masters Degree

PhD students with a relevant earned Masters degree can transfer up to 32 sh to their Epi or Bio doctoral program. This credit can apply to course requirements and/or electives, but not research hours. Faculty advisors determine student eligibility when reviewing the first program proposal. The maximum amount of transferable credit is not necessarily available to every student.

Standards of Performance for Epidemiology Program

In addition to school-wide standards, for epidemiology students no grade below "B" is acceptable in any Epidemiology or Biostatistics course. If a grade lower than "B" is achieved in such a course, it may be repeated once. Failure to maintain this standard will be grounds for dismissal from the epidemiology program.

PhD Preliminary Examination

With the assistance of the advisor, the student should select appropriate faculty for his or her preliminary examination committee. The committee must be

comprised of five members at a minimum, having at least two faculty members with tenure. The committee will administer the full preliminary examination, the details of which are as follows:

1. The written exam includes four areas: core and intermediate methods, advanced methods and two substantive areas. Students can select any two substantive areas in which they have completed a 500 level class. There are three 3-hour in-class examination sessions and a take-home component. The in-class sections focus on core and intermediate methods and substantive areas, and the take-home focuses on advanced methods.
2. The oral examination follows the written examination (within one month) and may reexamine students based on the answers to the written portion or include additional material based on required coursework.

PhD Dissertation Research: IPHS 599

The PhD dissertation in Epidemiology at UIC SPH represents the culmination of a student's doctoral training. The thesis or dissertation process is composed of two distinct components: a) the development of the dissertation proposal in conjunction with a dissertation advisor and committee, and b) conduct of the dissertation research and the writing of the dissertation. The dissertation proposal is developed under the guidance of the student's dissertation advisor. Past experience indicates that a close working relationship between the student and advisor greatly facilitates the proposal writing process. The dissertation proposal should be developed as soon as possible after the student passes his or her doctoral preliminary examination. With the assistance of the advisor, the student should select appropriate faculty for his or her dissertation committee. The committee must be comprised of five members at a minimum, having at least two faculty members with tenured status, and one member outside of SPH. The dissertation committee will meet with the student to approve the dissertation proposal, and to determine that the student is adequately prepared to undertake it.

A typical epidemiologic dissertation proposal will involve investigating the risk factors for a particular disease using a cohort, case-control or cross-sectional research design. Emphasis is placed on primary data collection though in some instances secondary analysis of already collected data may be permitted. In this situation, extensive manipulation of data must be involved to address a specific hypothesis with several components. The dissertation research must be creative and original and add significant new knowledge to the field of epidemiology. It is expected that the thesis results will be suitable for publication in a peer-reviewed scientific journal.

The thesis committee will re-convene at the completion of dissertation research to participate in the dissertation defense. After the student successfully defends, he or she will submit a paper copy of the dissertation to the SPH Director of Student Affairs, for approval of the thesis format. Prior to the defense, the student should obtain and read carefully the Graduate College Thesis Manual for rules and regulations regarding the writing and submission of a doctoral dissertation.

IRB: Institutional Review Board

All students must undergo Institutional Review Board (IRB) training and training on the protection of health data by the end of their first year of study. For research involving human subjects, students must submit IRB review or exemption forms prior to beginning their research. Students should consult the SPH Student Reference Guides available in the division, and speak with their advisors. Research involving human subjects cannot be undertaken without first obtaining IRB review or exemption.

Note: the written and defended thesis is required for submission mid-semester. Students are advised to plan their program completion and graduation accordingly.

Maternal and Child Health Epidemiology

In conjunction with the Community Health Sciences division, the Division of Epidemiology and Biostatistics allows students the opportunity to pursue a PhD in Epidemiology under the Maternal and Child Health (MCH) Epidemiology track. This program offers courses in both maternal and child health and epidemiology for students wishing to focus on applied MCH epidemiology.

SPH Core Course Requirement (may be waived if taken previously)

BSTT 401 Biostatistics II (4 sh)

Major Area Requirement - 11 credits at 500 level (11 sh)

CHSC/EPID 545 Reproductive and Perinatal Health (3 sh)

CHSC 548 Readings in Reproductive and Perinatal Epidemiology (2 sh)

EPID 501 Advanced Quantitative Methods in Epidemiology (3 sh)

CHSC 543 MCH Policy and Advocacy (3 sh)

Division Requirements (22-26 sh)

PA 541 Advanced Data Analysis I (4 sh)

Choose one:

BSTT 440 Sampling & Estimation Methods Applied to PH (3 sh)

-or-

PA 588 Methods for Analysis of Survey Data (2 sh)

CHSC/EPID XXX Advanced Applied Methods in MCH Epidemiology (3 sh)
(In AY 06-07 offered as CHSC 594 / EPID 594 Advanced Special Topics)

EPID 406 Epidemiologic Computing (3 sh)

EPID 404 Intermediate Epidemiologic Methods (4 sh)

Choose one:

EPID 410 Introduction to Infectious Disease Epidemiology (2 sh)

-or-

EPID 411 Introduction to Chronic Disease Epidemiology (3 sh)

Choose one:

CHSC 434 Introduction to Qualitative Methods in Public Health (3 sh)

-or-

PA 540 Research Methods for Public Administration (4 sh)

CHSC 551 Foundations of Public Health Inquiry (3 sh)

Required Seminars (1-2 sh)

Choose one:

EPID 591 Current Epidemiologic Literature (2 sh)

-or-

CHSC 595 MCH Seminar (1 sh)

-or-

EPID 595 Epidemiology Research Seminar (1 sh)

Electives (4-6 sh)

One or more of the following electives are suggested:

CHSC 577 Survey Questionnaire Design (2 sh)

EPID 520 Genetic Epidemiology (2 sh)

CHSC XXX Management Analysis of Qualitative Data (3 sh)
(In AY 06-07 offered as CHSC 594 Advanced Special Topics in Community Health Sciences)

PA 541 Advanced Data Analysis (4 sh)

EPID 510 Advanced Epidemiology of Infectious Diseases (2 sh)

EPID 471 Population I (3 sh)

BSTT 402 Logistic Regression and Survival Analysis (2 sh)

Biological Sciences Requirement

If no prior background, students must take 2-3 sh of biological science as an elective component.

Suggested:

HND 510 Nutrition, Physiologic Aspects (3 sh)

HND 520 Maternal Nutrition & Perinatal Development (3 sh)

HND 522 Adv. In Pediatric Nutrition (2 sh)

NuMC 507/508 Scientific Basis for Women's Health & Perinatal Nursing I/II (2 sh) / (2 sh)

NuSc 214/216 Clinical Pathophysiology I/II (2 sh) / (2 sh) --This sequence not for graduate credit

Transfer of Masters Credit 32 sh

Dissertation Research 32 sh

PROGRAM TOTAL 106-113 sh

Any required course may be waived on the basis of prior education or experience. Please refer to the section on Academic Policies and Standards for course waiver rules and procedure.

Preliminary Examination in MCH Epidemiology

The MCH Epidemiology preliminary examination will include an in-class Epidemiology exam based on EPID 494a/403 and 404, a 10-day take home analytic project based on CHSC/EPID 594 (Advanced Applied Methods in MCH Epidemiology) and EPID 501 and six to nine hours of content/methods questions to be determined by the preliminary exam committee.

Students in the Maternal and Child Health Epidemiology program should adhere to all other guidelines for the Epidemiology PhD degree, in addition to schoolwide PhD degree information.

Epidemiology Learning Objectives for PhD Students

In addition to the schoolwide learning objectives for the PhD student and the learning objectives for MPH and MS students in epidemiology, the PhD student in epidemiology should attain skills specifically for the practice of epidemiology in research, teaching and practical settings.

Biostatistics

Minimum credit hour requirement: 96 sh

N.B.: Biostatistics students should **not** take BSTT 400, BSTT 401 or EPID 400 to fulfill SPH course requirements. See below for full description of required courses.

Course Work: 64 sh

Includes up to 32 sh of course work transferred from prior MS in biostatistics or statistics.

Biostatistics Requirements (13 sh)

Offered every fall semester:

BSTT 534 Large Sample Theory (2 sh)
(In AY 06-07 offered as BSTT 594 Special Topics in Biostatistics)

EPID 403 Introduction to Epidemiology: Principles and Methods (3 sh)

Offered alternating fall semesters:

BSTT 531 Advanced Statistical Inference (3 sh) - Odd numbered years

BSTT 533 Linear Models (4 sh) - Even numbered years

Register at least one semester during program (offered every fall and spring):

BSTT 595 Seminar (1 sh)

Electives (19 sh)

Choose *at least two* of the following (offered alternate years) (8 sh)

Offered alternating spring semesters:

BSTT 541 Generalized Linear Models (4 sh) – even numbered years
(in AY 06-07 offered as BSTT 594 Special Topics in Biostatistics)

BSTT 545 Advanced Survival Analysis (4 sh) – odd numbered years
(in AY 06-07 offered as BSTT 594 Special Topics in Biostatistics)

BSTT 542 Missing Data (4 sh) – odd numbered years
(in AY 06-07 offered as BSTT 594 Special Topics in Biostatistics)

Offered alternating fall semesters:

BSTT 543 Computational Statistics (4 sh) – even numbered years
(in AY 06-07 offered as BSTT 594 Special Topics in Biostatistics)

BSTT 544 Bayesian Methods (4 sh) – odd numbered years
(in AY 06-07 offered as BSTT 594 Special Topics in Biostatistics)

Additional electives (11 sh)

May include courses from above list; courses from a collateral area; additional semesters of BSTT 595)

May not include BSTT 400, BSTT 401, BSTT 402, BSTT 410, BSTT 502, BSTT 503, or BSTT 504

Dissertation Research (32 sh min.)

- Research in the Public Health Sciences - PhD (IPHS 599)
- Dissertation research milestones: Preliminary Examination (offered every September), Dissertation Proposal Approval, and Dissertation Defense

Transferred MS Credit (32 sh)

For earned Masters degrees in Biostatistics or Statistics

PROGRAM TOTAL 96 sh

Note: PhD students majoring in Biostatistics must take any required MS courses whose equivalent they have not taken previously.

Any required course may be waived on the basis of prior education or experience. Please refer to the section on Academic Policies and Standards for course waiver rules and procedure.

Credit for Prior Masters Degree

PhD students with a relevant earned Masters degree can transfer up to 32 sh to their doctoral program. This credit can apply to course requirements and/or electives, but not research hours. Faculty advisors determine student eligibility when reviewing the first program proposal. The maximum amount of transferable credit is not necessarily available to every student.

Standards of Performance for Biostatistics Program

Students in Biostatistics are allowed only one grade of C in required courses. A student who receives two Cs in required courses will not be allowed to graduate from the program. A student may re-take a course one time and attempt to replace the C with a higher grade.

Doctoral Preliminary Examination in Biostatistics

1. The written exam includes both in-class and take-home portions. The in-class portion is scheduled for 4 hours, while students have 1 week to complete the take-home portion. Material for the exam is based primarily on the 500-level biostatistics courses as well as the required statistics courses.
2. The oral examination follows the written examination (within one month) and may re-examine students based on the answers to the written portion or include additional material based on required coursework.

PhD Dissertation Research: IPHS 599

Biostatistics students should follow the guidelines found in paragraphs 1 and 3 under Epidemiology Doctoral Dissertation Research, and in the schoolwide PhD degree information.

Revised Biostatistics PhD requirements pending approval Fall 2006; AY 2005-06 requirements may be found at:
http://www.uic.edu/sph/downloads/shandbook0405/phd_requirements.pdf

PhD Degree Requirements for the Health Policy and Administration Division

1. PhD students must complete all of the SPH requirements for the PhD degree. However, rather than EPID 400, students must take EPID 403.