UIC UNIVERSITY OF ILLINOIS AT CHICAGO SCHOOL OF PUBLIC HEALTH

Student Handbook

Doctor of Philosophy (PhD)

AY 2016-2017

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PHD OVERVIEW

The Doctor of Philosophy (PhD) degree in Public Health Sciences is an academic degree awarded by the Graduate College of the University of Illinois and is subject to the requirements described in the UIC Graduate Catalog. (For this degree program, the School of Public Health acts as the Department of Public Health Sciences (DPHS) of the Graduate College.) The program develops scholars capable of conducting research and teaching in the public health sciences. The program also prepares students for research careers in governmental, private, and voluntary organizations. Programs of study leading to a PhD (in Public Health Sciences) may be taken in one or more of the Divisions of the School of Public Health:

1. Community Health Sciences
2. Environmental and Occupational Health Sciences
3. Epidemiology and Biostatistics
4. Health Policy and Administration

Interdisciplinary studies that combine two or more of these areas are encouraged.

The PhD program consists of six components:

1. SPH School-wide Core Course Requirements – (11 SH) (if not completed at masters level)
2. Divisional Course Requirements and Electives – (variable based on chosen Division).
3. The Preliminary Examination
4. Dissertation Research Requirements
   IPHS 599 PhD Dissertation Research Hours (minimum of 32 SH)
   Examinations:
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Conditional Admission Policy Statement: Under special circumstances, an applicant may be recommended by a Division for admission on a conditional basis (e.g., completion of preparatory course work). The conditions under which a student is admitted to the School are to be stipulated in writing by the director of the Division recommending admission of the student. Conditionally admitted students must satisfy the conditions prior to graduation (or earlier if so specified by the Division).

Change in Division: If a student's interests change after admission or the student determines that professional goals would be better achieved in a division different from the one originally assigned please contact the Academic Coordinator in the home division to initiate the process to Request for Change of Degree.

Students requesting a division change must meet the requirements of the division they wish to enter. Admission to the new division is not guaranteed.

Degree Completion Time Limitations:

- **7 years:** A student who is admitted to the Graduate College with a master's degree, or who continues in the Graduate College after completing the master's degree at the University of Illinois at Chicago, must complete the degree requirements within seven years after initial registration as a doctoral student. 32 SH of credit from a relevant master's program will be credited toward the 96 SH degree requirements.
- **9 years:** A student who is admitted to the Graduate College without a master's degree and proceeds directly to the doctorate must complete degree requirements within nine years of initial registration as a doctoral student.

The Director of Graduate Studies (DGS) will periodically review the progress of doctoral candidates. If the DGS determines that the student is not making satisfactory progress toward the degree, the student may be recommended for dismissal from the program.

Time spent on a leave of absence approved by the program and the Graduate College is not counted toward the degree time limit (see the Leave of Absence section of the Academic Policies and Procedures Handbook).

Preliminary Examination Time Limitation: Failure to complete the degree requirements within five years of passing the preliminary examination requires retaking the examination. Graduate College rules require that a minimum of one year elapse after passing the preliminary examination, before defending the dissertation.

The SPH Student Handbooks are static documents which are updated each August. The degree requirements contained in the AY 2016-17 Handbooks are applicable to students matriculating into a degree program during this academic year. Students should consult the SPH website if interested in curriculum revisions adopted during the year. Such changes will apply to the next year's entering class.

PROGRAM OF STUDY

Coursework

The curriculum is individually designed to meet the interests and goals of the student. Introductory courses in biostatistics and epidemiology are the only ones specifically required in the PhD program, if not previously completed at the masters level**. (These requirements may be waived if justified on the basis of equivalent prior experience or course work.) The division of credit hours between course work and dissertation research is highly dependent on the background of each student. At a minimum, students must complete 9 SH in formal 500 series courses in a major area of concentration (not necessarily in one division). [Note: The 595 seminar series may not be counted towards fulfillment of this requirement.] If required by the chosen division, the student must also complete 6 SH in a collateral area. Course work must be designed to assure preparation for the preliminary examination and subsequent doctoral research. Course work does not, however, usually dominate the PhD program.
** Biostatistics majors are required to take an introductory epidemiology course and advanced biostatistics courses; see BSTT PhD Curricular Chart.

After admission to the PhD program, the student is assigned a major advisor with interests and expertise compatible with the student's goals. Together, the student and advisor develop an overall program of study which is approved by the Division Director and the Graduate College. The approved program proposal form shall be submitted prior to the completion of the second semester of study. Revised proposals may be submitted thereafter.

The student is encouraged to utilize any of the resources of The University of Illinois at Chicago plus those in neighboring institutions. (See description of the Chicago Metropolitan Exchange Program.) The primary requirement is that a meaningful, cohesive, health-directed, research-oriented program be constructed.

Students may use Independent Study (IPHS 596) to satisfy elective hours. Up to 9 semester credit hours (SH) of independent study may be credited toward the PhD program.

All PhD students are strongly encouraged to take the case-based course entitled *Public Health Framework for Researchers* (IPHS 594 - 3 SH MS students; 4 SH PhD students).

Instructional Experience

Each PhD student is required to obtain experience in classroom teaching. The teaching experience for doctoral candidates should at minimum consist of planning, leading and evaluating a minimum of two classroom sessions, which may be online or in-class sessions. If students are clear that they will be pursuing a career in academe, they should be encouraged by their advisors to go beyond this minimum.

All PhD students' efforts should be supervised and evaluated by appropriate faculty. Documentation should accompany this evaluation so that PhD students are clearly rated on their efforts at planning, teaching, and evaluating the students in their classes. Efforts of students who are laboratory or teaching assistants should be considered vital teaching experiences as long as there is appropriate evaluation of such efforts by faculty and students. It is the responsibility of the student and his or her faculty advisor to make sure the student's instructional experience is properly evaluated.

PhD program proposal forms include areas for the date and description of the student's teaching experience. The expected term for satisfying this requirement should be identified at the initial submission of the program proposal, and, if known, a description of the proposed teaching experience. A revised program proposal must be submitted to the student's advisor near the graduation term (if not required earlier as a result of other changes to the student's program) reflecting a brief description of the instructional experience.

Students with relevant and appropriate prior teaching experience may petition to waive this requirement. At a minimum, the prior teaching experience should meet the criteria identified above.

The Preliminary Examination

The Preliminary Exam is a rigorous test of the student's knowledge and understanding of his/her chosen program of study, and the ability to apply such knowledge to the field of his/her specialization.
Timing: The preliminary examination should be undertaken as soon as possible after completion of the required program of study.

Committee Selection: Prior to sitting for the preliminary examination, the student selects a Preliminary Examining Committee with the assistance and approval of the major advisor. It consists of a minimum of five members, of whom at least three (3) are UIC Graduate College faculty with full membership and two (2) of whom must be tenured, who have interest and expertise in the student's major and collateral areas. The Chair of the Committee must be a full member of the UIC Graduate College Faculty. If a collateral area is required, at least one member must represent the student's collateral area. Up to two of the members may be selected from outside the DPHS or UIC. The committee must be approved by the Graduate College. The committee works with the student until the preliminary examination is completed.

The preliminary examination consists of two parts-a written part prepared for the individual student by the examining committee, and an oral part administered by the committee sitting together with the student. These parts will be separated by no more than four weeks. In the case where the student has failed the written portion of the examination, the Committee may elect not to give the oral examination.

The written questions will cover broad conceptual issues and problems, providing the principal (but not necessarily exclusive) focus of the oral examination. At the discretion of the Division the format and scheduling of the written exam may vary, but will include the following information:

- Core principles, concepts, and approaches in the general area of specialization.
- Basic knowledge of the facts and current status of the discipline of specialization.
- Problem-solving, applying principles and facts to issues in the area of specialization.
- Collateral area principles, facts, and problem-solving.

The oral examination may consist of further discussion and elaboration of the answers to the written questions and/or any other relevant topics raised by the examiners.

The evaluation of the student's performance will result in one of several findings:

Pass - This finding indicates that the student is progressing satisfactorily in the acquisition of knowledge and understanding in the elected area of specialization. The student is, as a consequence, encouraged to proceed with additional specialized course work and to begin preparatory work on the dissertation topic. Passing this examination formally admits the student to PhD candidacy.

Fail - This finding indicates that the student is deficient in knowledge of the elected area of specialization and may lead to either of two consequences. The student may be required to withdraw from the PhD program, or may be asked to retake the examination after completion of deficiency-oriented course work. The Preliminary Examining Committee and Division Director have jurisdiction for remedial programming, but dismissal will be the prerogative of the Director of Graduate Studies for DPHS with the advice of the Executive Committee. The decision may be appealed to the Dean. The Dean,

on the recommendation of the Committee, may permit a second examination. A third examination is not permitted.

The Preliminary Examining Committee certifies the results and reports them to the Graduate College.

The Dissertation Phase

Dissertation Committee Selection: After successfully completing the preliminary examination, the student, in conjunction with the major advisor, will select a dissertation chair and Dissertation Examining Committee. This committee consists of five (5) members, at least two (2) of whom must be tenured full members of the Graduate College faculty, and one who is from outside the Division. The dissertation advisor, who must be from the student's division, serves as chair of the committee and must be a member of the Graduate College faculty. The Graduate College must approve the Committee composition.

Dissertation Committee Functions: The Dissertation Committee is responsible for guiding the student's research and helping to assure successful performance during the Dissertation Proposal Defense and ultimately the Dissertation Defense.

The PhD candidate should work with his/her Committee chair to set an introductory meeting of the Committee during which the expected intellectual contributions of each Committee member are discussed and decided upon.

The student and committee members should also decide upon the frequency of meetings, optimal communication methods, expected timeframe for developing and completing the dissertation and scheduling examinations, faculty availability during summer months, and other guidelines and mutual expectations for the sharing and review of the student's work.

It is highly recommended that the PhD student at the point of beginning work on his or her thesis or dissertation obtain a copy of the Graduate College Thesis Manual.

The Dissertation Proposal

Dissertation Proposal Elements: The Dissertation Proposal typically consists of the first three chapters of the dissertation: Chapter 1. Introduction or Broad Overview of the Proposed Research; Chapter 2. Literature Review; Chapter 3. Methodology.

Dissertation Proposal Defense: The Dissertation Proposal Defense, given orally by the Dissertation Examining Committee, serves two primary functions:

- To ascertain whether the student is adequately prepared to pursue the dissertation topic. If deficiencies are discovered, additional course work may be required.
- To indicate to the student whether the Dissertation Examining Committee feels that the proposed research is feasible and whether the research should result in a useful, satisfactory product within the time and resources available.

The Dissertation Proposal Defense should not put the student into a pass-fail situation. Rather, it should, when necessary, guide the student into a more feasible and/or fruitful research plan. It is the responsibility of the student to complete the PhD Dissertation Proposal Approval Form, and after obtaining the signatures of the committee submit the document to the division Academic Coordinator for processing. A "pass" constitutes a contract between the Examining Committee and the student that all major elements of the research proposal have been identified and agreed to.

Research and Dissertation Format

The student's research is carried out under the guidance of a dissertation advisor and the Dissertation Committee. The research may take any or a combination of many forms: field, laboratory, or computer applications are some examples. The research must be creative and original, advancing a field of public health by adding significant new knowledge, testing current theory, or leading to a new theory. Completion of the assigned research credit does not guarantee an acceptable dissertation; additional research effort may be necessary.

The dissertation may be presented in the traditional thesis format or may consist of manuscripts (typically three)
of publishable quality with respect to peer-reviewed journals. The specific requirements for both are to be established by the dissertation committee in accordance with Graduate College requirements.

The manuscript format typically follows the chapter outline below:
1. Introductory chapter to include the over-arching theme(s), hypotheses which tie the papers together
2. Literature review
3. Methods chapter
4. The manuscripts
    a) Paper #1
    b) Paper #2
    c) Paper #3
5. Conclusion to include a discussion of the impact of the research
6. Appendices to include, as appropriate, such items as survey instruments, foundational tables, organizational charts, additional tables, and other items not appropriate for a journal article nor the body of the thesis document.

The manuscript format must conform to the Graduate College Thesis Manual.

Dissertation Defense: Both a final examination and dissertation presentation is required. This typically takes the following format. The candidate presents his/her findings at an open meeting of faculty, students, and the Dissertation Committee. Immediately following the open session the committee meets with the student in executive session. Finally, the Dissertation Examining Committee report to the Graduate College that the student has or has not passed his/her examination and thus has or has not satisfied all requirements for the PhD degree.

Final Formatting of Dissertation: It is the student's and advisor's responsibility to assure the final dissertation format meets the requirements of the Graduate College Thesis Manual. A final draft will be

reviewed and approved by the SPH Director of Graduate Studies and the Graduate College, or returned to the student for further editing.

Upon receipt of a properly formatted thesis, the Director of Graduate Studies will recommend the student to the Graduate College for award of the degree.

PROGRESS REPORTING

PhD students are required to report on progress at least annually. The progress report includes a student self-assessment of academic progress, including evidence of his/her progress and an assessment of the student's progress by the student's advisor (before the preliminary examination) or research committee (after the preliminary examination). Prior to the preliminary examination, progress reports must be submitted to the Office of Student Affairs by October 1 each year. After the preliminary examination, progress reports must be submitted to the Office of Student Affairs by October 1 and March 1 of each year. Progress reports will be reviewed by the Committee on Academic Progress. Students placed on Academic Probation for failing to maintain a Grade Point Average (GPA) of 3.0 on a 4.0 scale, should refer to the SPH Academic Policies and Procedures Handbook.
After the preliminary examination, students will be placed on Academic Probation at the first report of "lack of progress." A second report of "lack of progress" will result in dismissal from the program.

Students have the opportunity to discuss all reviews in person with the Director of Graduate Studies (DGS), if requested by the student. In the event that the student's advisor is the DGS, a suitable third party (e.g., the division director, Associate Dean for Academic Affairs, or other senior professor) should lead the discussion. The student will have an opportunity to provide written feedback to the formal review. All of the above will be retained in the student's academic file. These requirements represent minimum requirements; programs may further require additional items.

THE PHD CURRICULUM BY DIVISION

Biostatistics – PhD

The PhD in Biostatistics program requires a minimum of 96 semester hours (SH). This program includes the following course requirements:

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

School-Wide Core Requirements (35 SH)

Course	Title	Credits
EPID 403	Introduction to Epidemiology: Principles and Methods*	3 SH
IPHS 599	PhD Dissertation Research	min. 32 SH
Required Non-Credit Training: http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/education/index.shtml		
HIPAA Research Training		Non-credit
Investigator Training 101		Non-credit

(*If not taken previously)

Divisional Core Requirements (10 SH)

Course	Title	Credits
BSTT 560	Large Sample Theory	2 SH
BSTT 561	Advanced Statistical Inference	3 SH
BSTT 562	Linear Models	4 SH
BSTT 595	Seminar	1 SH

Selectives and Electives (minimum of 19 SH)*

Select at least three of the following (offered alternate years):

- BSTT 563 Generalized Linear Models (spring, even #d yrs.)(4 SH)
- BSTT 564 Missing Data (spring, odd #d yrs.)(4 SH)
- BSTT 565 Computational Statistics (fall, even #d yrs.) (4 SH)
- BSTT 566 Bayesian Methods (fall, odd #d yrs.) (4 SH)
- BSTT 567 Advanced Survival Analysis (spring, odd #d yrs.)(4 SH)

Additional Electives (7 SH):
May include courses from list above, courses from a collateral area, or additional semesters of BSTT 595. May not include BSTT 400, BSTT 401, BSTT 505, BSTT 523, BSTT 524 or BSTT 525.

*Students with a master's degree in public health or a related area may receive up to 32 SH of credit towards the 96 SH total.

Doctoral Preliminary Examination in Biostatistics

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. 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.

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.

Community Health Sciences – PhD

The PhD in Community Health Sciences program requires a minimum of 96 semester hours (SH), although more hours are often necessary. PhD students in Community Health Sciences are required to select a major area of concentration relevant to community health and obtain advisor approval in all course selections. For students selecting a PhD in MCH Epidemiology, there are additional requirements. This program includes the following course requirements:

School-Wide Core Requirements (32 SH)

Course	Title	Credits
IPHS 599	PhD Dissertation Research	min. 32 SH
Required Non-Credit Training: http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/education/index.shtml		
HIPAA Research Training		Non-credit
Investigator Training 101		Non-credit

Divisional Core Requirements (22-28 SH)

Course	Title	Credits
CHSC 595	Doctoral Seminar (1 SH; take 2 semesters)	2 SH

In addition, PhD students in the Community Health Sciences are required to take courses from three specific areas: 1) Theory, 2) Advanced Research Methods, and 3) Advanced Analytic Methods. Choose six (6) SH from each course list:

Theory Courses (6 SH total)		
Course	**Title**	**Credits**
CHSC 550	Advanced Introduction to Community Health Sciences	3 SH
CHSC 551	Foundations of Public Health Inquiry	3 SH

Advanced Research Methods Courses (6 SH total)		
Course	**Title**	**Credits**
Select **6 SH** from the following courses:		
CHSC 447	Survey Planning and Design	3 SH
CHSC 577	Survey Questionnaire Design	3 SH
CHSC 594	Advanced Special Topics: Research Synthesis and Meta-Analysis	3 SH
CLJ 560	Quantitative Methods and Design	4 SH
CLJ561	Qualitative Methods and Design	4 SH
ED 501	Data and Interpretation in Educational Inquiry	4 SH
HPA 522	Health Evaluation Methods	3 SH
NUEL 548	Methodological Issues for Cross-Cultural Research	3 SH
NUEL 562	Primary Health Care Research Methods	3 SH
PSCH 533	Advanced Community and Prevention Research	3 SH
PSCH 534	Prevention Research, Theory, and Practice	3 SH
PA 528	Public Program Evaluation	4 SH
PA 540	Research Design for Public Administration	4 SH
PA 581	Cross-Cultural Survey Research Methods	2 SH

PA 582	Survey Data Collection Methods	2 SH
UPP 461	Geographic Information Systems for Planning	4 SH
UPP 588	Research Design and Evaluation	4 SH

Advanced Analytic Methods Courses (6 SH total)		
Course	**Title**	**Credits**
Select **6 SH** from the following courses:		
CHSC 534	Management and Analysis of Qualitative Data	3 SH
CHSC 549	Advanced Applied Methods in MCH Epidemiology	3 SH
EPID 404	Intermediate Epidemiologic Methods	4 SH
EPID 501	Advanced Quantitative Methods in Epidemiology	4 SH
EPID 518	The Epidemiology of Pediatric Diseases	3 SH
HPA 557	Measurement in Health Services Research	3 SH
PSCH 545	Multivariate Analysis	3 SH
PA 541	Advanced Data Analysis I	4 SH
PA 542	Advanced Data Analysis II	4 SH
PA 588	Survey Data Reduction and Analysis	2 SH
POLS 501	Data Analysis II	4 SH

Additional Required Courses

The following courses must be taken if an equivalent course was not completed in the student's master's program:

- BSTT 400 Biostatistics I (4 SH)
- BSTT 401 Biostatistics II (4 SH)
- CHSC 400 Public Health Concepts and Practice (3 SH)
- CHSC 446 Research Methods in Community Health (3 SH)
- CHSC 480 Health Education and Health Promotion (3 SH)
- EPID 403 Introduction to Epidemiology: Principles and Methods (3 SH)

Note: Students in the PhD program in Maternal and Child Health Epidemiology need to discuss these requirements with their advisor.

Concentration Electives (minimum of 12 SH)

Select 12 SH in concentration area; at least 9 SH must be 500-level courses. The 595 seminar series may not be counted towards fulfillment of this requirement. Note: Students must complete the number of electives necessary to bring total program hours to a minimum of 96 credit hours.

Note: Students with a master's degree in public health or a related area may receive up to 32 SH of credit towards the 96 SH total. The 32 SH of credit will apply to the required 39-45 elective hours.

Preliminary Examination Requirements

The Preliminary Examination is an important milestone for PhD Students. Successful completion of the exam indicates that the student is ready to work on the dissertation research. The exam should be taken as soon as possible after the student has completed the required coursework of the program. Students must complete the degree within 5 years after taking the Preliminary Examination or they must retake the exam.

Optional Program - Maternal and Child Health Epidemiology

Maternal Child Health Epidemiology Core (40-42 SH)		
Course	**Title**	**Credits**
BSTT 505	Logistic Regression and Survival Analysis	2 SH
BSTT 507	Sampling and Estimation Methods Applied to Public Health	3 SH
BSTT 537	Longitudinal Data Analysis	4 SH
EPID 404*	Intermediate Epidemiologic Methods	4 SH
EPID 406	Epidemiologic Computing	3 SH
EPID 501	Advanced Quantitative Methods in Epidemiology	4 SH
CHSC/EPID 518	Epidemiology of Pediatric Diseases	3 SH
CHSC/EPID 548	Readings in Reproductive and Perinatal Epidemiology	2 SH
CHSC/EPID 549	Advanced Applied Methods in MCH Epidemiology	3 SH
CHSC 550	Advanced Introduction to Community Health Sciences	3 SH
CHSC 551	Foundations of Public Health Inquiry	3 SH
CHSC 595	CHSC Doctoral Seminar	1 SH
Select **one** of the following courses:		
EPID 409	The Epidemiology of HIV/AIDS	2 SH
EPID 410	Introduction to Infectious Disease Epidemiology	2 SH
EPID 411	Introduction to Chronic Disease Epidemiology	3 SH
EPID 594	Surveillance	3 SH
Select **one** of the following courses:		
CHSC 510	MCH Outcomes and Measurement	3 SH
CHSC 511	MCH Delivery Systems [**NOTE:** Students taking CHSC 511 must also enroll in a 1 SH field seminar - CHSC 594]	3 SH
CHSC 512	Best Practices in MCH Programs	3 SH
CHSC 543	MCH Policy and Advocacy	3 SH

Tier 1 Highly Recommended Electives – Maternal Child Health Epidemiology		
Course	**Title**	**Credits**
One or more of the following electives are highly recommended:		
BSTT 594	Statistical Methods for Spatial Data in Public Health	3 SH
CHSC 434	Introduction to Qualitative Methods in Public Health	3 SH
CHSC 534	Management and Analysis of Qualitative Date	3 SH
CHSC 543	MCH Policy and Advocacy	3 SH
CHSC/EPID 545	Reproductive and Perinatal Health	3 SH
CHSC 577	Survey Questionnaire Design	2 SH
EPID 529	Epidemiology of Sexually Transmitted Infections	3 SH

EPID 594	Social Epidemiology	2 SH
EPSY 512	Hierarchical Linear Modeling	4 SH
HPA 557	Measurement in Health Services Research	3 SH
HPA 564	Geographic Information Systems in Public Health	3 SH
PA 582	Survey Data Collection Methods	2 SH
PA 588	Survey Data Reduction and Analysis	2 SH

Tier 2 Suggested Electives – Maternal Child Health Epidemiology		
Course	**Title**	**Credits**
One or more of the following electives are suggested:		
CLJ 560	Quantitative Methods and Design	4 SH
ED 502	Essentials of Qualitative Inquiry in Education	4 SH
EPID 471	Population I	3 SH
EPID 510	Advanced Epidemiology of Infectious Diseases	2 SH
EPID 520	Genetic Epidemiology	2 SH
NUEL /CHSC 563	Neighborhoods and Health	3 SH
PA 578	Surveys, Public Opinion, and Public Policy	4 SH
PA 581	Cross-Cultural Collection Methods	2 SH
PSCH 538	Thinking and Acting Ecologically in Community Research and Intervention	3 SH
UPP 461	Geographic Information Systems for Planning	4 SH
UPP 543	Planning for Healthy Cities	4 SH

Biological Sciences

Depending on clinical background, one or more of the following courses are strongly encouraged:

- HN 510 Nutrition-Physiological Aspects (3 SH)
- HN 594 Advanced Topics in Community Nutrition (3 SH)
- NUSP 548 Biological Basis for Women's Health & Perinatal I (2 SH)
- NUSP 549 Biological Basis for Women's Health & Perinatal II (1-2 SH)

Preliminary Examination in MCH Epidemiology

The preliminary exam will include a written and oral exam including a 4 hour in-class methods exam, a 10 day take home data analysis, and either in-class or take home questions covering two substantive areas within MCH as determined by the student's examination committee. Ideally, the preliminary exam is taken after all course work has been completed, but it may be taken earlier with consent of the academic advisor.

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

Environmental and Occupational Health Sciences – PhD

The PhD in Environmental and Occupational Health Sciences program requires a minimum of 96 semester hours (SH). Students must complete a minimum of 9 SH in formal 500 series courses in major area of concentration (not necessarily in one division). Students must also complete 6 SH in a collateral area. Note: The 595 seminar series may not be counted towards fulfillment of this requirement.

This program includes the following course requirements *:

School-Wide Core Requirements (43 SH)

Course	Title	Credits
BSTT 400*	Biostatistics I	4 SH
BSTT 401*	Biostatistics II	4 SH
EPID 403*	Introduction to Epidemiology: Principles and Methods	3 SH
IPHS 599	PhD Dissertation Research	min. 32 SH
Required Non-Credit Training: http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/education/index.shtml		
HIPAA Research Training		Non-credit
Investigator Training 101		Non-credit

*If not previously taken at the masters level

Divisional Core Requirements (16 SH)

Course	Title	Credits
EOHS 595	PhD Seminar in EOHS (enrolment to be repeated at least four semesters) (4 SH total)	1 SH
Methods selective: Students should select **one** course from the following lists of courses in qualitative and quantitative methods; to be selected according to academic needs and research activities:		
1. Qualitative Methods		
Course	**Title**	**Credits**
CHSC 534	Management And Analysis of Qualitative Data	3 SH
CLJ 561	Qualitative Methods and Design	4 SH
DHD 546	Qualitative Methods in Disability Research	4 SH
NUEL 544	Qualitative Research in Nursing	4 SH
PSCH 531	Community Research	3 SH
2. Quantitative Methods		
Course	**Title**	**Credits**
BSTT 537	Longitudinal Data Analysis	4 SH
EPID 500	Applied Epidemiologic Methods	4 SH
EPID 501	Adv Quant Methods Epid	4 SH
IE 442	Design and Analysis of Experiments in Engineering	4 SH

Please note: department approval may be required prior to enrolment.
In addition, all students are required to take a minimum of 12 semester hours in EOHS courses; choosing at least one course from each of the following three areas:

Exposure Assessment		
Course	**Title**	**Credits**
Select **at least one** of the following courses:		
EOHS 405	Environmental Calculations	2 SH
EOHS 411	Water Quality Management	4 SH
EOHS 418	Analysis of Water and Wastewater Quality	2 SH
EOHS 421	Fundamentals of Industrial Hygiene	2 SH
EOHS 428	Industrial Hygiene Laboratory I	2 SH
EOHS 432	Air Quality Assessment and Management	4 SH
EOHS 542	Water Chemistry	4 SH
EOHS 543	Environmental Organic Chemistry	4 SH
EOHS 564	Geographic Information System Application in Public Health	3 SH
EOHS 565	Data-mining Applications in Public Health	3 SH

Health Assessment		
Course	**Title**	**Credits**
Select **at least one** of the following courses:		
EOHS 455	Environmental and Occupational Toxicology	3 SH
EOHS 551	Occupational and Environmental Disease	3 SH
EOHS 571	Injury Epidemiology	3 SH

Risk Assessment and Policy		
Course	**Title**	**Credits**
Select **at least one** of the following courses:		
EOHS 480	Environmental and Occupational Health Policy	3 SH
EOHS 556	Risk Assessment in Environmental and Occupational Health	3 SH
EOHS 572	Environmental Risk Assessment and Management	4 SH
EOHS 580	Seminar in Environmental and Occupational Health	2 SH

Electives (5 SH)*

*Students without a prior master's degree in public health or a related area will be required to complete 37 SH of electives.

Optional Concentration - Occupational and Environmental Epidemiology (114-116 SH)*

Students must complete the School-Wide Core Requirements above and 40 - 42 semester credit hours of the following courses as part of their divisional and elective choices. In addition, students must adhere to the divisional requirements as stipulated for their individual program of study.

Course	Title	Credits
BSTT 505	Logistic Regression and Survival Analysis	2 SH
EOHS 421	Fundamentals of Industrial Hygiene	2 SH
EPID 404	Intermediate Epidemiologic Methods	4 SH
EPID 406	Epidemiologic Computing	3 SH
EPID 501	Advanced Quantitative Methods in Epidemiology	4 SH
EPID/EOHS 530	Current Topics in Occupational & Environmental Epidemiology	2 SH
EPID/EOHS 535	Applied Methods in Occupational Epidemiology	2 SH
EPID/EOHS 536	Applied Methods in Environmental Epidemiology	2 SH
EOHS 551	Occupational and Environmental Diseases	3 SH
EOHS 556	Risk Assessment in Environmental and Occupational Health	3 SH
EOHS 563	Occupational Safety and Health Management Systems	3 SH
EPID/EOHS 571	Injury Epidemiology and Prevention	3 SH
Select **one** of the following courses:		
EPID 410	Epidemiology of Infectious Diseases	2 SH
EPID 411	Epidemiology of Chronic Diseases	3 SH
Select **one** of the following courses:		
EOHS/HPA 564	Geographic Information System Application in Public Health	3 SH
UPP 461	Geographic Information Systems for Planning	4 SH
Select **one** of the following:		
EPID 595	Epidemiology Research Seminar	1 SH
EOHS 595	PhD Seminar I EOHS	1 to 2 SH
Recommended Electives		
EOHS 405	Environmental Calculations	2 SH
EOHS 411	Water Quality Management	4 SH
EOHS 432	Air Quality Assessment and Management	4 SH
EOHS 455	Environmental and Occupational Toxicology	3 SH
EOHS/HPA 565	Data-mining Applications in Public Health	3 SH
Credit from Previous Master's Degree in Public Health or Related Area		32 SH
Total Credit Hours Including School-Wide Core Requirements*		114-116 SH

*Required courses shown above will be waived based on previous course work thus reducing the total number of required semester hours. However, a minimum of 96 SH will be required of all students in the PhD program.

Epidemiology – PhD

The PhD in Epidemiology program requires a minimum of 96 semester hours (SH). This program includes the following course requirements:

School-Wide Core Requirements (32 - 43 SH)

Course	Title	Credits
BSTT 400*	Biostatistics I	4 SH
BSTT 401*	Biostatistics II	4 SH
EPID 403*	Introduction to Epidemiology: Principles and Methods	3 SH
IPHS 599	PhD Dissertation Research	min. 32 SH
Required Non-Credit Training: http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/education/index.shtml		
HIPAA Research Training		Non-credit
Investigator Training 101		Non-credit

*If not previously taken at the masters level

Divisional Core Requirements (24 SH)

Course	Title	Credits
BSTT 505	Logistic Regression and Survival Analysis	2 SH
EPID 404	Intermediate Epidemiologic Methods	4 SH
EPID 406	Epidemiologic Computing	3 SH
EPID 410	Epidemiology of Infectious Diseases	2 SH
EPID 411	Epidemiology of Chronic Disease	3 SH
EPID 501	Advanced Quantitative Methods in Epidemiology	4 SH
EPID 591	Current Epidemiologic Literature	2 SH
EPID 595	Epidemiology Research Seminar	1 SH
Select **one** of the following (not required for Cancer Epidemiology concentration):		
BSTT 506	Design of Clinical Trials	3 SH
BSTT 507	Sampling and Estimation Methods Applied to Public Health	3 SH

Note: Students in the PhD program in Maternal and Child Health Epidemiology need to discuss these requirements with their advisor.

Electives (minimum of 29 SH)

- 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 and approved by your advisor (e.g. Biostatistics, Nutrition, Maternal and Child Health, Environmental Sciences, Sociology) (6 SH)
- Remaining electives (13-15 SH)

Note: Students must complete the number of electives necessary to bring total program hours to a minimum of 96 credit hours. Students with a master's degree in public health or a related area may receive up to 32 SH of credit towards the 96 SH total.

Optional Concentrations

Occupational and Environmental Epidemiology in Epidemiology (115-117 SH)**

Students must complete the School-Wide Core Requirements above and 40-42 semester credit hours of the following courses as part of their divisional and elective choices. In addition, students must adhere to the divisional requirements as stipulated for their individual program of study.

Course	Title	Credits
BSTT 505	Logistic Regression and Survival Analysis	2 SH
EOHS 421	Fundamentals of Industrial Hygiene	2 SH
EPID 404	Intermediate Epidemiologic Methods	4 SH
EPID 406	Epidemiologic Computing	3 SH
EPID 501	Advanced Quantitative Methods in Epidemiology	4 SH
EPID/EOHS 530	Current Topics in Occupational & Environmental Epidemiology	2 SH
EPID/EOHS 535	Applied Methods in Occupational Epidemiology	2 SH
EPID/EOHS 536	Applied Methods in Environmental Epidemiology	2 SH
EOHS 551	Occupational Diseases	3 SH
EOHS 556	Risk Assessment in Environmental and Occupational Health	3 SH
EOHS 563	Occupational Safety and Health Management Systems	3 SH
EPID/EOHS 571	Injury Epidemiology and Prevention	3 SH
EPID 595	Epidemiology Research Seminar	1 SH
Select **one** of the following courses:		
EPID 410	Epidemiology of Infectious Diseases	2 SH
EPID 411	Epidemiology of Chronic Diseases	3 SH
Select **one** of the following courses:		
EOHS/HPA 564	Geographical Information Systems in PH	3 SH
UPP 461	Geographical Information Systems for Planning	4 SH
Recommended Electives:		
EOHS 405	Environmental Calculations	2 SH
EOHS 411	Water Quality Management	4 SH
EOHS 432	Air Quality Assessment and Management	4 SH
EOHS 455	Environmental and Occupational Toxicology	3 SH
EOHS/HPA 565	Datamining Applications in Public Health	3 SH
Credit from Previous Master's Degree in Public Health or Related Area		32 SH
Total Credit Hours Including School-Wide Core Requirements**		**115-117**

Required courses will be waived based on previous course work thus reducing the total number of required semester hours. However, a minimum of 96 SH will be required of all students in the PhD program.

Cancer Epidemiology (98 SH)

In addition to the School-wide and division core requirements, students must complete 18 semester hours of the following courses:

Cancer Epidemiology Core (18 SH)		
Course	**Title**	**Credits**
EPID 515	Survey of Cancer Epidemiology	3 SH
EPID 516	Advanced Cancer Epidemiology	2 SH
EPID 520	Genetics in Epidemiology	2 SH
EPID 554	Occupational and Environmental Epidemiology	2 SH
EPID 594	Special Topics: Social Epidemiology	3 SH
EPID 594	Special Topics: Surveillance Epidemiology	3 SH
CHSC 514 or HN 594*	Nutritional Epidemiology or Special Topics in Human Nutrition	3 SH

*With permission of the division, students may substitute HN 532: Evaluation of Nutritional Status (3 SH) and submit a waiver request to apply the credit.

Electives (minimum 16 SH)

- Students must take a minimum of 16 credits of electives.
- At least one biological science class (4 SH) relevant to student's research area is required if no prior biological sciences background

Optional Program - Maternal and Child Health Epidemiology

In addition to school-wide requirements students in the Maternal and Child Health Epidemiology program should take the following courses and adhere to all other guidelines for the Epidemiology PhD degree:

Maternal Child Health Epidemiology Core (37-39 SH)		
Course	**Title**	**Credits**
BSTT 505	Logistic Regression and Survival Analysis	2 SH
BSTT 507	Sampling and Estimation Methods Applied to Public Health	3 SH
BSTT 537	Longitudinal Data Analysis	4 SH
EPID 404*	Intermediate Epidemiologic Methods	4 SH
EPID 406	Epidemiologic Computing	3 SH
EPID 501	Advanced Quantitative Methods in Epidemiology	4 SH
CHSC/EPID 518	Epidemiology of Pediatric Diseases	3 SH
CHSC/EPID 548	Readings in Reproductive and Perinatal Epidemiology	2 SH
CHSC/EPID 549	Advanced Applied Methods in MCH Epidemiology	3 SH
CHSC 551	Foundations of Public Health Inquiry	3 SH
CHSC 595	CHSC Doctoral Seminar	1 SH
Select **one** of the following courses:		
EPID 409	The Epidemiology of HIV/AIDS	2 SH
EPID 410	Introduction to Infectious Disease Epidemiology	2 SH
EPID 411	Introduction to Chronic Disease Epidemiology	3 SH

EPID 594	Surveillance	3 SH
Select **one** of the following courses:		
CHSC 510	MCH Outcomes and Measurement	3 SH
CHSC 511	MCH Delivery Systems [**NOTE:** Students taking CHSC 511 must also enroll in a 1 SH field seminar - CHSC 594]	3 SH
CHSC 512	Best Practices is MCH Programs	3 SH
CHSC 543	MCH Policy and Advocacy	3 SH
	Preliminary Examination in MCH Epidemiology**	

*May be waived if equivalent course was taken in a Master's degree program.

Electives

Students must select elective courses in conjunction with their advisor as necessary to reach the minimum of 96 total program hours.

Tier 1 Highly Recommended Electives – Maternal Child Health Epidemiology		
Course	**Title**	**Credits**
One or more of the following electives are highly recommended:		
BSTT 594	Statistical Methods for Spatial Data in Public Health	3 SH
CHSC 434	Introduction to Qualitative Methods in Public Health	3 SH
CHSC 534	Management and Analysis of Qualitative Date	3 SH
CHSC 543	MCH Policy and Advocacy	3 SH
CHSC/EPID 545	Reproductive and Perinatal Health	3 SH
CHSC 577	Survey Questionnaire Design	2 SH
EPID 529	Epidemiology of Sexually Transmitted Infections	3 SH
EPID 594	Social Epidemiology	2 SH
EPSY 512	Hierarchical Linear Modeling	4 SH
HPA 557	Measurement in Health Services Research	3 SH
HPA 564	Geographic Information Systems in Public Health	3 SH
PA 582	Survey Data Collection Methods	2 SH
PA 588	Survey Data Reduction and Analysis	2 SH

Tier 2 Suggested Electives – Maternal Child Health Epidemiology		
Course	**Title**	**Credits**
One or more of the following electives are suggested:		
CLJ 560	Quantitative Methods and Design	4 SH
ED 502	Essentials of Qualitative Inquiry in Education	4 SH
EPID 471	Population I	3 SH
EPID 510	Advanced Epidemiology of Infectious Diseases	2 SH
EPID 520	Genetic Epidemiology	2 SH
NUEL /CHSC 563	Neighborhoods and Health	3 SH
PA 578	Surveys, Public Opinion, and Public Policy	4 SH
PA 581	Cross-Cultural Collection Methods	2 SH
PSCH 538	Thinking and Acting Ecologically in Community Research and Intervention	3 SH
UPP 543	Planning for Healthy Cities	4 SH

Biological Sciences

Depending on clinical background, one or more of the following courses are strongly encouraged:

- HN 510 Nutrition-Physiological Aspects (3 SH)
- HN 594 Advanced Topics in Community Nutrition (3 SH)
- NUSP 548 Biological Basis for Women's Health & Perinatal I (2 SH)
- NUSP 549 Biological Basis for Women's Health & Perinatal II (1-2 SH)

Preliminary Examination in MCH Epidemiology

The preliminary exam will include a written and oral exam including a 4 hour in-class methods exam, a 10 day take home data analysis, and either in-class or take home questions covering two substantive areas within MCH as determined by the student's examination committee. Ideally, the preliminary exam is taken after all course work has been completed, but it may be taken earlier with consent of the academic advisor.

Performance Standards (applicable to all Epidemiology students in the PhD program)

In addition to school-wide standards, no grade below "B" is acceptable in any Epidemiology or Biostatistics required course. If a grade below "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.

Health Policy and Administration – PhD

The PhD in Health Policy and Administration (HPA) program requires a minimum of 96 semester hours (SH). This program includes the following course requirements:

School-Wide Core Requirements (43 SH)

Course	Title	Credits
BSTT 400*	Biostatistics I	4 SH
BSTT 401*	Biostatistics II	4 SH
EPID 403*	Introduction to Epidemiology: Principles and Methods	3 SH
IPHS 599	PhD Dissertation Research	min. 32 SH
Required Non-Credit Training: http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/education/index.shtml		
HIPAA Research Training		Non-credit
Investigator Training 101		Non-credit

*If not previously taken at the masters level

Electives

All students must complete a sufficient number of courses to bring the total program hours to 96 SH. A minimum of 9 SH must be taken at the 500-level. **Note:** IPHS 599 hours may not be counted toward fulfillment of this requirement

Students with a master's degree in a relevant research area may receive up to 32 SH of credit towards the 96 SH total.

Recommended Plan of Study

Under direction of the academic advisor, each student must complete appropriate courses that address the curriculum objectives. Students will be expected to take additional courses in their area(s) of focus, e.g., economics, qualitative research, measurement, survey research, program evaluation. The specific courses taken to achieve curriculum objectives must be approved by the Director of Doctoral Studies.

Students must complete a minimum of 9 SH in formal 500 series courses in major area of concentration (not necessarily in one division). If required by the chosen division, students must also complete 6 SH in a collateral area. **Note:** IPHS 599 cannot be counted towards fulfillment of this requirement.

During the first year of doctoral studies, it is recommended that students take a core set of courses regardless of intended concentration. In the second year students will be encouraged to choose one of two recommended tracks identified below and pursue coursework in that area.

Students may enter the doctoral program with a bachelor's degree, but will be strongly encouraged to remediate a math deficiency by the end of the first year.

Students entering the program with a prior master's degree may be permitted to transfer up to 32 SH of relevant coursework, depending on relevancy and appropriateness of the master coursework.

School-Wide Core Requirements (43 SH)

Course	Title	Credits
BSTT 400*	Biostatistics I	4 SH
BSTT 401*	Biostatistics II	4 SH
EPID 403	Introduction to Epidemiology: Principles and Methods	3 SH
IPHS 599	PhD Dissertation Research	min. 32 SH
Required Non-Credit Training: http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/education/index.shtml		
HIPAA Research Training		Non-credit
Investigator Training 101		Non-credit

*For students who have already taken BSTT 400 and BSTT 401 students will be encouraged to substitute the following courses:
BSTT 505 Logistic Regression and Survival Analysis (2 SH)
BSTT 507 Sampling and Estimation Methods Applied to Public Health (3 SH)
BSTT 537 Longitudinal Data Analysis (4 SH)

Recommended Core (1st Year Students)

Course	Title	Credits
HPA 467	Economics, Policy Analysis and Program Evaluation	3 SH
HPA 522	Public Health Research Design and Methods	3 SH
HPA 573	Principles of economic evaluation of health care interventions	3 SH
HPA 594	Introduction to Health Services Research	3 SH
HPA 594	Advanced Health Services Research	3 SH
HPA 594	Applied Research Methods	4 SH

Students without any prior economics coursework are encouraged to enroll in HPA 460 Introduction to Health Economics (3cr) in the fall semester. In addition, students lacking a strong background in calculus and linear algebra will be encouraged to take:

MATH 165, Calculus for Business (5cr); and MATH 310, Applied Linear Algebra (3cr)

Optional Tracks

Two optional tracks are offered: a) health services/outcomes concentration- designed to provide the research skills necessary to study the organization, access, financing and delivery of health services, and (b.) health economics concentration- which provides the research skills necessary to evaluate the policies that influence population health and the political environment.

Health Services/ Outcomes Research

Health Services/Outcomes Track (25-30 SH)		
Course	**Title**	**Credits**
BSTT 505	Logistic Regression and Survival Analysis	2 SH
BSST 507	Sampling and Estimation Methods Applied to Public Health	3 SH

BSST 537	Longitudinal Data Analysis	4 SH
CHS 447	Survey Planning and Design	3 SH
CHS 534	Qualitative Data Analysis (opt)	3 SH
CHS 551	Foundations of Public Health Inquiry	3 SH
HPA557	Measurement in Health Services Research	3 SH
HPA 590	Research and Grant Writing	3 SH
UPP 588 or UPP 584	Research Design and Evaluation or Methods in Policy Analysis	4 SH

Track Learning Outcomes:

Demonstrate knowledge of measurement theory and its applications

Familiarity with philosophy of science and theories and models relevantto health services research, such as the Health Belief Model.

Experience with survey research design

Mastery of program evaluation and policy analysis
Understanding of qualitative research techniques and analysis ofqualitative data

Health Economics Track

Health Economics Track (23-35 SH)		
Course	**Title**	**Credits**
ECON 436	Mathematical Economics (opt)	4 SH
ECON 501	Microeconomics I	4 SH
ECON 502	Microeconomics II	4 SH
ECON 534	Econometrics I	4 SH
ECON 535	Econometrics II	4 SH
ECON 539	Microeconometrics (opt)	4 SH
ECON 555	Advanced Health Economics I	4 SH
HPA 590	Research and Grant Writing	3 SH

Track Learning Outcomes:

Demonstrate knowledge of the theoretical and historical foundations ofhealth services and policy research. Included are theoretical frameworksand substantive findings regarding the primary issues in health services research--access, quality, and the cost, financing and effectiveness ofhealth services.

Demonstrate a high degree of mastery in basic statistical methods andepidemiology.

Demonstrate facility in advanced statistical methods, Stata use, and research design.

Demonstrate knowledge of principles, models and practical methods forthe economic evaluation of heal th care services.

Demonstrate knowledge of micro organizational research topics,
including motivation, leadership, power and politics, and employeeattitudes and behaviors in organizati ons.

Understanding of the role of government and government policies in thehealth care market.

Facility in grant writing strategies with an emphasis on methodologiesrelevant to health services, economics and outcomes research.

Demonstrate an understanding of professional norms and engagementin interdisciplinary research.

JOINT MD/MPH DEGREE

The School of Public Health participates in a joint MD/PhD with the College of Medicine.

Joint Degree	Availability of Joint Degree Programs by Division				
	CHS	EOHS	Epi	Bio	HPA
MD/PhD			X	X	

MD/PhD training in epidemiology and/or biostatistics provides an extended period of study in the etiologic and methodological approaches of population-based health research in concert with complete medical school education. Application is normally made at the time of application to the College of Medicine; however, applicants will also be considered during their first two years of medical training. Students must apply to the MD/PhD Training Program and to the College of Medicine, and indicate in their application that they are interested in a PhD in epidemiology or biostatistics. Criteria for admission to the program include academic excellence, prior research experience, potential for independent and creative research, and commitment to a career in academic medicine. Students receive a stipend throughout their years of study. Students interested in further information may contact Susan Altfeld, Associate Dean for Academic Affairs, SPH, phone: (312) 355-1134, e-mail: saltfeld@uic.edu; or the MD/PhD Training Program: Dr. Larry Tobacman, Director, phone: (312) 413-1010, e-mail: lst@uic.edu; Roberta Bernstein, Assistant Director, phone: (312) 996-7473, e-mail: roberta@uic.edu.

INTERDEPARTMENTAL CONCENTRATIONS

The School of Public Health offers PhD students the opportunity to participate in any of the Interdepartmental Concentrations as appropriate to their research interests.

Interdepartmental Concentration	CHS	EOHS	Epidemiology	HPA
Gender and Women's Studies	x	x	x	x
Survey Research	x	x	x	x
Violence Studies	x	x	x	x
Women's Health	x	x	x	x

Gender and Women's Studies Concentration

The School of Public Health is a participating department in the graduate concentration in Gender and Women's Studies offered by the Gender and Women's Studies Program at the University of Illinois at Chicago. Once admitted to SPH, students may apply to the GWS Program for admission to the concentration.

Experiencing GWS courses will allow students to critically examine issues of women and gender, as well as their complex intersections with race, class, ethnicity, and sexual identity; providing a rich, interdisciplinary focus.

For additional details about the program visit:
http://www.uic.edu/depts/wsweb/academics/graduate.html.

Contact Information

For further information about the concentration in Gender and Women's Studies please contact:

Jennifer Brier
Director of Gender and Women's Studies
312-413-2458
jbrier@uic.edu

Survey Research Methodology Concentration

The Interdepartmental Graduate Concentration in Survey Research Methodology provides doctoral students with state-of-the-art knowledge and skills in scientifically-grounded survey research methodologies. Graduate students electing the Interdepartmental Graduate Concentration in Survey Research Methodology receive the PhD after having fulfilled the requirements of the Graduate College, their major academic units, and the Interdepartmental Graduate Concentration in Survey Research Methodology.

Students must complete a minimum of 14 semester hours, consisting of at least 7 SH of approved core courses and electives. No more than 3 SH of independent study may be used toward satisfying the concentration.

Core Courses (minimum of 7 SH)

Students must complete three of the six courses listed below. (NOTE: If a student elects to complete both BSTT 440 and STAT 431, only one of those courses may be counted toward fulfilling the core course requirement):

Course	Title	Credits
CHSC 447	Survey Planning and Design	3 SH
CHSC 577	Survey Questionnaire Design	3 SH
BSTT 440	Sampling & Estimation Methods Applied to Public Health	3 SH
STAT 431	Introduction to Survey Sampling	4 SH
PA 588	Survey Data Reduction and Analysis	2 SH
PA 579	Practicum in Survey Research	2 SH

Elective Courses

Students must complete elective courses from the list below sufficient to complete 14 SH of total required coursework. (Elective courses may include courses from the list of core courses if those courses are not used to complete the core requirement.) No more than one independent study course (1 to 3 SH) may be used as an elective.

Course	Title	Credits
POLS 467	Public Opinion and Political Communication	4 SH
PA 580	Survey Nonresponse	2 SH
PA 578	Polling, Public Opinion and Public Policy	4 SH
PA 581	Cross-Cultural Survey Measurement	2 SH
PA 582	Survey Data Collection Methods	2 SH
PA 583	Psychology of Survey Measurement: Cognitive and Social Processes	2 SH
PA 584	Internet Surveys	2 SH
PA 585	Survey Research Ethics	2 SH
PA 586	History of Survey Research	2 SH
STAT 531	Sampling Theory I	4 SH
STAT 532	Sampling Theory II	4 SH

Course Substitutions: Students may substitute another course with permission of their graduate degree academic advisor and the Director(s) of the Survey Research Methodology Concentration. In general, no more than one course or independent study course (1 to 3 SH) may be substituted. However, under special circumstances, a student may petition for approval of additional courses.

Election of the Concentration: Students must be enrolled as a graduate student in a doctoral degree program in one of the participating academic units listed at the concentration web site. Students must prepare a proposed schedule of coursework that fulfills the Interdepartmental Graduate Concentration in Survey Research Methodology requirements. The proposal must be signed by the student and his/her academic advisor. The signed proposal must be submitted to the Director(s) of the Survey Research Methodology Concentration. Concentration Director(s) will notify the student and academic advisor of the student's acceptance into the Concentration and whether the proposed coursework is approved.

Contact Information

For further information about the concentration in Survey Research Methodology please contact:

Allyson Holbrook, PhD
Associate Professor, Public Administration
312-996-0471
allyson@uic.edu

Also, visit the Interdepartmental Graduate Concentration in Survey Research Methodology at http://www.srl.uic.edu/gcsrm.htm.

Violence Studies

The School of Public Health is a participating department in the graduate concentration in Violence Studies offered in collaboration with the Departments of Criminology, Law, and Justice, Psychology, and Political Science as well as the Gender and Women's Studies Program and the Jane Addams College of Social Work. The concentration is administered jointly through the Department of Criminology, Law, and Justice and the College of Social Work.

Composed of courses from multiple disciplines, this concentration provides students with a holistic view of the problem of violence in society and deepens their knowledge and skill set to address it. This concentration aims to produce broadly trained individuals who can apply theories and methods from multidisciplinary perspectives to critically analyze and effectively respond to various types of violence in society through innovative programs of research, policy development, treatment, and prevention. The concentration requires a minimum of 11 semester hours (4 courses) with two courses selected from a list of foundational courses and then two additional supplementary courses.

For additional details about the program including the required course work, review the Graduate Catalog description at http://www.uic.edu/gcat/SWVIOS.shtml.

Contact Information

For further information about the concentration in Violence Studies please contact:

Patricia O'Brien, PhD
Associate Professor, Jane Addams College of Social Work
(312) 996-2203
pob@uic.edu

Women's Health Concentration

The Interdepartmental Graduate Concentration in Women's Health is co-sponsored by the UIC College of Nursing, the School of Public Health, and the Gender and Women's Studies program. The Concentration is housed within the College of Nursing.

This Concentration encompasses the multidisciplinary aspects of Women's Health and provides training in the foundations of Women's Health through its structure and content. The Core courses provide a broad overview of the field and issues within Women's Health, and they address the need for a conceptual and applied background in Women's Health. The elective allows a student to pursue an issue or area of professional interest in Women's Health. The multidisciplinary requirement in this Concentration ensures that a student has significant exposure to a paradigm other than the dominant paradigms used within their own school or department.

This concentration is an elective concentration for graduate students, consisting of core and elective courses across several academic units. The Concentration curriculum can be completed without the need to change existing graduate college or departmental academic requirements. In the case of certain academic units, however, students may need to complete additional hours beyond the minimum required for a masters or a doctoral degree within their home school, college or department.

The Interdepartmental concentration in Women's Health requires 12 semester hours (SH) and is designed for completion in as little as four semesters by completing one course each semester. Students must complete at least 6 SH outside of their home area and take one core course from three separate areas: 1) Introductory Women's Health, 2) Women's Health Specific Issues, and 3) Theory/Methods.

For a complete description of the concentration, including its target audience, course requirements, and designated and affiliated faculty see the College of Nursing website at:
http://www.nursing.uic.edu/academics-admissions/prospective-students#application-deadlines

Contact Information

For further information about the concentration in Women's Health please contact:

Carrie Klima, CNM, PhD
Concentration Director and Clinical Associate Professor of Nursing
(312) 996-1863
cklima@uic.edu

CHICAGO METROPOLITAN EXCHANGE PROGRAM (CMEP)

The Chicago Metropolitan Exchange Program (CMEP) allows UIC doctoral students to access courses at the University of Chicago and Northwestern University. Courses taken through the CMEP should be relevant to the student's program and not offered at UIC. Students will be billed for courses taken through the CMEP at their home campus at its usual rate. Please note that UIC students who would like to take courses at the University of Illinois at Urbana-Champaign or the University of Illinois at Springfield may do so as a concurrent registrant through the UIC Registrar's Office, and would not be part of this program.

More information about the CMEP is available on the Graduate College website at: http://grad.uic.edu/cms/?pid=1000979.

PHD DEGREE COMPETENCIES

PhD degree students are prepared to assume academic or research careers in a basic or applied science related to public health or careers in public health practice within both the public and private sectors. In general, the PhD graduate will be able to:

- Demonstrate an in-depth knowledge and understanding of issues in his/her substantive interest area in the biological, physical or behavioral/social sciences related to public health.
- Display a high degree of mastery in appropriate theories, analytical skills, research design and methodology in the biological, physical or behavioral/social sciences related to public health.
- Identify knowledge gaps in the selected field, synthesize relevant information, and formulate focused research questions to address these gaps.
- Design and conduct original research that contributes to the knowledge in his/her selected field.
- Incorporate knowledge of cultural, social, behavioral and biological factors in formulating research questions, and design and implement research.
- Communicate effectively and clearly both orally and in writing, and present public health issues and research findings in his/her area of expertise to peers, students and the general public.
- Demonstrate teaching skills in working with students and other professionals in academic, research or practice settings.

Biostatistics: PhD Competencies

The PhD student in Biostatistics should attain skills in the practice of biostatistics for research and teaching in academic, government, and industry settings.

In addition to competencies for MS students in biostatistics, the PhD graduate in Biostatistics will be able to:

1. Contribute to the development of the biostatistical discipline.
2. Apply advanced methodology for various data structures and problems, and interpret results appropriately.
3. Contribute effectively to interdisciplinary research.
4. Communicate biostatistical concepts effectively.

Community Health Sciences: PhD Competencies

PhD degree students are prepared to assume academic or research careers in a basic or applied science related to public health or careers in public health practice within both the public and private sectors.

In general, the PhD graduate will be able to:

1. Demonstrate an in-depth knowledge and understanding of issues in his/her substantive interest area in the biological, physical or behavioral/social sciences related to public health.
2. Demonstrate a high degree of mastery in appropriate theories, analytical skills, research design and methodology in the biological, physical or behavioral/social sciences related to public health.
3. Identify knowledge gaps in the selected field, synthesize relevant information, and formulate focused research questions to address these gaps.
4. Design and conduct original research that contributes to the knowledge in his/her selected field.
5. Incorporate knowledge of cultural, social, behavioral and biological factors in formulating research questions, and design and implement original research.

6. Communicate effectively and clearly both orally and in writing, and present public health issues and research findings in his/her area of expertise to peers, students, and the general public.
7. Demonstrate the ability to conceptualize and engage in interdisciplinary collaborations.

Environmental and Occupational Health Sciences: PhD Competencies

In addition to the school-wide competencies for the PhD student and the EOHS competencies for MS students, the PhD graduate in EOHS will be able to:

1. Design and conduct original research that leads to new contributions to the field, demonstrating mastery in specialized areas of the field. The student will be able to:
    a) Evaluate existing facts, methods, theories and ideas, and identify critical knowledge gaps;
    b) Formulate research questions, hypotheses and/or objectives to advance the field;
    c) Develop a research proposal that includes a scientific rationale, appropriate methods and a research timeline
    d) Articulate the role of budget and regulatory requirements in the design and implementation of research
    e) Draw inferences and interpret results with reference to the work of others
    f) Compose scientific papers of publishable quality

2. Demonstrate intellectual attributes consistent with successful scientific careers, including:
    a) Knowledge and inter-relationships of fundamental concepts and methods of EOHS
    b) Specialized knowledge and application of that knowledge in an area of EOHS
    c) Ability to describe how scientific research contributes to the advancement of environmental and occupational health in the realms of practice and policy
3. Demonstrate professional attributes consistent with successful scientific careers, including:
    a) Leadership
    b) Collaboration
    c) Critique of the work of others and of self
    d) Engagement in the scientific community
4. Teach at college or graduate level

Epidemiology: PhD Competencies

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

Demonstrate the ability to:

- Critically appraise epidemiologic literature
- Summarize the current state of knowledge and develop hypotheses that may lead to new discoveries in a particular area of epidemiology
- Identify approaches to developing and evaluating theories about the determinants of health and disease patterns in populations
- Generate original ideas, data, and analyses of a quality that will influence public health practice or epidemiological science
- Choose among the various study design alternatives used in the evaluation of causal theories or

public health programs in epidemiology
- Choose among various data analysis methods in epidemiology
- Design a study and write a scientific proposal
- Communicate original ideas and findings orally and in writing at a level effective for diverse audiences including attendees at professional meetings, readers of research journals and laypersons
- Define the central role of causation in Epidemiologic study, including knowledge of various definitions and concepts of causation

Cancer Epidemiology Concentration

In addition to meeting the Epidemiology PhD competencies, students concentrating in Cancer Epidemiology will be able to:

- Describe and characterize the major known determinants of cancer.
- Describe, locate, analyze and interpret existing data relevant to cancer.
- Understand the strengths and weaknesses of alternative epidemiologic study designs in the context of cancer research.
- Work within a multidisciplinary team to study behavioral, environmental, infectious, nutritional and/or genetic factors involved in cancer etiology.
- Design, conduct and analyze epidemiologic studies testing hypotheses relevant for cancer.

Health Policy and Administration: PhD Competencies

For students pursuing the PhD, HPA offers a number of different opportunities. There is a general research opportunity, with students pursuing a wide range of individually tailored curricula. For those students, the competencies are the same as the school-wide PhD competencies.

In addition to the school-wide competencies, HPA PhD students who focus their work on research in **public health informatics** are expected to be able to:
- Demonstrate knowledge of methods in information systems planning, analysis, development, implementation and evaluation.
- Select and apply the appropriate advanced statistical, qualitative and survey research methods to answering questions in public health informatics.
- Demonstrate the ability to use geographic information systems, data mining techniques and web-application development to develop effective public health surveillance systems.
- Apply public health science theories, principles and methods when developing and implementing information systems

In addition to the school-wide competencies, HPA PhD students who focus their work in **health services research** are expected to be able to do the following:
- Demonstrate knowledge of the underlying relevant theoretical frameworks for studying health, health services and health policy
- Demonstrate knowledge of the evolution, structure and functioning of the U.S. health system.
- Identify and analyze the relevant literature on what is known and what are the frontiers of knowledge in their area of interest.

- Select, defend and implement an appropriate study design, with attention to the reliability and validity of results.
- Recognize the need for and employ specialized techniques (e.g., measurement theory or qualitative analysis) if appropriate.
- Analyze their data and draw appropriate conclusions and identify important implications suggested by their data.
- Demonstrate professional competence in teaching, communication and grant writing.

Maternal and Child Health Epidemiology Concentration

The following competencies apply for students electing the Maternal Child Health Epidemiology program:

Surveillance & Assessment

Students will be able to:

- Identify the major domestic and international causes of mortality and morbidity within MCH populations, including differences between the U.S. and other developed and less developed countries.
- Describe the normal patterns of individual and family growth and development from an intergenerational and lifespan perspective.
- Apply understanding of human and environmental biology and behavioral sciences principles to determine potential biological mechanisms underlying maternal and child health status outcomes.
- Describe MCH problems in terms of time, magnitude/severity, scope, dispersion/location, and co-occurrence/co-morbidity.
- Describe populations by age, race/ethnicity, culture, and other societal factors of relevance to the MCH population.
- Identify environmental, social, and cultural factors that affect the health of women, children, and families in the community.
- Identify different types of surveillance methods for specific MCH public health problems.
- Identify and evaluate the sources, quality, and limitations of surveillance data for MCH health problems.
- Design data collection instruments when current data sources are not available to answer question of interest in maternal and child health.
- Assess the adequacy of the data elements to be collected or reported in an MCH surveillance system.
- Design a community-based MCH health status assessment and synthesize key findings from primary and secondary data to decide on MCH public health priorities to be addressed.
- Document the community health care delivery system in relation to the health needs of the MCH population.

Study Design and Implementation of Studies

Students will be able to:

- Describe principles and key features of community assessment, program design, implementation, and evaluation.
- Use principles of research design, sampling, basic descriptive and inferential statistics, validity and reliability in the development and conduct of studies.

- Identify the strengths and limitations of qualitative and quantitative methods.
- Describe data collection strategies and their strengths and limitations, including surveys, focus groups, and record-based information.
- Formulate hypotheses or research questions, and develop and implement an analytic strategy.
- Identify key variables including environmental, psychosocial, and biological factors that are routinely considered in reproductive, perinatal and pediatric epidemiology analyses.
- Describe the key theories underpinning studies of reproductive, perinatal and pediatric health outcomes (e.g., weathering hypothesis, life-course approach).
- Identify knowledge gaps in reproductive, perinatal and pediatric epidemiology, synthesize relevant information, formulate focused research questions, and conduct analysis to address these gaps.
- Outline key methodological issues in the study of reproductive, perinatal and pediatric outcomes and approaches to successfully address these issues.
- Describe major epidemiologic study designs to be used to investigate maternal and child health problems, including the strengths, weaknesses and best uses of each.
- Describe the relationship between epidemiologic study designs and other study design types (e.g., experimental and quasi-experimental designs) and know when various design types are appropriate for various types of investigations (e.g., evaluations, etiologic studies).
- Design investigations (e.g., evaluations, etiologic studies) including the identification of target populations, determining which groups are to be included in the study (exposed versus unexposed, cases versus controls), evaluating possible sources of bias/confounding and developing ways to minimize bias confounding.
- Identify the scientific underpinnings and determine the validity of evidence for interventions addressing MCH problems.
- Develop mechanisms to monitor and evaluate programs and service networks for their effectiveness and quality, including the use of performance measures.

Data Analysis and Interpretation

Students will be able to:

- Prepare and interpret data from vital statistics, the U.S. census, complex and simple surveys, service utilization, and other relevant reports on the health of MCH populations, and have the ability to detect meaningful influences from data and the translation of data into information.
- Extract data from primary and secondary sources; use basic statistical and graphics software, including programs such as Excel, EPI-info, SPSS, and SAS for data management, analysis, and linkage of data sets.
- Describe analysis issues and limitations of key MCH datasets.
- Develop a conceptual and statistical analysis plan appropriate to answer questions under investigation.
- Use a variety of statistical methods appropriate to answer the questions under investigation.
- Utilize data analysis strategies in a variety of applied situations: summarizing data including ranking, trend analysis, resource allocation, development and monitoring of performance measures.
- Understand the difference between statistical and practical significance when describing and reporting on an MCH health problem.
- Develop and implement a strategy for building multivariable regression models that is both statistically and epidemiologically appropriate.

- Perform basic multivariable analyses as needed and appropriately handle potential confounders and effect modifiers.
- Understand the use of stratified regression modeling as an alternative way to handle effect modification (interaction).
- Utilize advanced multivariable approaches such as random effects modeling, proportional hazard modeling, multinomial logistic modeling, cluster analysis, and principal component/factor analysis.
- Interpret the relevance of analytic findings for the design, implementation and/or enhancement of MCH public health programs.
- Use the appropriate cultural/social/political framework to develop recommendations for the design, implementation and/or enhancement of MCH public health programs.
- Understand reasons for linking data and challenges in linking data.
- Analyze and interpret data using geographical information software.
- Understand the statistical issues in the analysis of data from complex sample surveys.

Data Reporting, Translation, and Dissemination

Students will be able to:

- Report study findings in relationship to existing MCH policies, regulations, and laws as well as the social, economic, political, and environmental context.
- Report study findings using the appropriate cultural/social/political frameworks to develop recommendations or interventions.
- Use the appropriate reporting techniques to communicate key MCH health status and health service issues to stakeholders (e.g., general public, news media, and policy-makers).
- Describe the pros and cons of different data reporting techniques.
- Determine when it is necessary or beneficial to report stratum-specific data.
- Understand effective and appropriate use of information technology, including but not limited to computer graphics and other software necessary for efficient program management and communication.
- Use effective written and oral communication skills, including accurate and effective preparation of presentations, manuscripts, and reports based on both simple and complex analyses to agency boards, administrative organizations, scientific meetings, legislative bodies, consumers, and/or the media using demographic, statistical, programmatic, and scientific information.

MCH Leadership

Students will be able to:

- Articulate their personal values and beliefs and how they align with public health values.
- Identify how their personal attitudes, beliefs, and experiences (successes and failures) influence their leadership style.
- Discuss principles and issues involved in the ethical and sensitive conduct of MCH practice and research, including the ethical and confidential collection of data and its management, analysis, and dissemination.
- Share thoughts, ideas, and feelings about MCH/Public health issues effectively in discussions, meetings, and presentations with diverse individuals and groups.
- Develop and maintain positive relationships with community and agency partners, colleagues, administrative staff, and key stakeholders.

MCH EPI Leadership

Students will be able to:

- Effectively advocate for new or enhanced MCH data infrastructure in public health agencies.
- Take a lead role in the conceptualization of new or enhanced MCH data systems for surveillance and/or research.
- Contribute to the process of developing the technical specifications for new or enhanced MCH data systems for surveillance and/or research.
- Effectively and clearly communicate orally and in writing, and present public health issues and research findings in the field of MCHEPI to peers, students, and the general public.
- Demonstrate the ability to teach MCHEPI skills to students and other professionals in academic, research, or practice settings.

Occupational and Environmental Epidemiology: PhD Competencies

The following competencies apply for students electing the Occupational and Environmental Epidemiology concentration.

PhD students will be able to:

- Describe and characterize the major known determinants of occupational and environmental diseases and injuries;
- Describe, locate, analyze, and interpret existing data relevant to occupational and environmental diseases and injuries;
- Understand the strengths and weaknesses of alternative epidemiology study designs used in the context of occupational and environmental epidemiological research;
- To work within a multidisciplinary team of environmental health scientists, industrial hygienists, toxicologists, statisticians, physicians, and nurses in studying the factors involved in the etiology of occupational and environmental diseases and injuries; and
- Design, conduct, and analyze epidemiological studies testing hypotheses relevant for understanding the etiology of occupational and environmental diseases and injuries.