UIC SCHOOL OF PUBLIC HEALTH
UNIVERSITY OF ILLINOIS AT CHICAGO

Student Handbook

Master of Science (MS)

and

MS in Clinical and Translational Sciences (MS CTS)

AY 2019-2020

Revised July 2019

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The SPH Student Handbooks are static documents which are updated each June. The degree requirements contained in the AY 2019-2020 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.

MASTER OF SCIENCE (MS) OVERVIEW

The Master of Science (MS) 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.) MS degree students are prepared for continuing studies through the PhD program.

The Division of Environmental and Occupational Health Sciences has a more rigorous revision that is listed below. This program is pending campus approval Fall 2019.

Programs of study leading to the MS degree are offered by each of the following SPH Divisions:

Environmental and Occupational Health Sciences
Epidemiology and Biostatistics
Health Policy and Administration

The MS program consists of four components (minimum of 48 SH)

1. SPH School-wide Core Requirements
    - IPHS 520: Foundations of Public Health
    - BSTT 400: Biostatistics I*
    - EPID 403: Intro to Epidemiology: Principles and Methods

    *Not required for MS students in the Biostatistics concentration
2. Divisional Core Requirements and Electives – (variable based on chosen Division)
3. Culminating Experience –
    - IPHS 598 Research in Public Health – MS (variable based on chosen division and concentration range: minimum 8 sh)
    - Research must be completed in three to four semesters of full-time work leading to a required thesis. The research may include theoretical, laboratory, field, or computer-based investigation. Research is undertaken with the assistance and approval of the student's academic advisor and Thesis Examining Committee.
    - Final Oral Examination - The final oral examination consists of a presentation of the student's research findings at an open meeting of students and faculty and a separate oral examination in the academic division by the student's Thesis Examining Committee. **Biostatistics Students only:** All MS students in biostatistics take a comprehensive exam at the end of their second program year. This is in lieu of a master's thesis.
4. Required Non-Credit Training
    - HIPAA Research Training (no credit)
    - Human Subjects Research (no credit)
    - SPH Academic Integrity Tutorial (no credit)
    - Title IX Training (no credit)

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 process a "Request for Change of Degree" form.

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 Deadline: MS students must candidates must complete all of the requirements within six calendar years after their initial registration in the Graduate College. Students pursuing more than one degree at the same time will be allowed an additional two years. Time spent on a leave of absence approved by the School 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).

PROGRAM OF STUDY

For the MS program of study only two courses, BSTT 400 and EPID 403, are stipulated as school-wide requirements and students are encouraged to select courses from more than one division (most divisions have additional requirements for their MS students). Programs might consist, for example, of a blend of environmental and occupational health sciences with epidemiology and biostatistics. The School of Public Health courses might also be combined with studies outside the School. It is recommended that all students take BSTT 401, Biostatistics II, as part of their program of study in preparation for thesis research. A major requirement is that the program of study is designed and the entire 48 semester hours, including the electives, be directed toward a meaningful health-related goal. For full-time students, it is anticipated that at least four semesters, usually more depending upon the thesis topic, will be needed to complete the requirements for the MS degree. The student's thesis format must adhere to the Graduate College requirements.

Independent Study Hours (IPHS 596): Students may use Independent Study (IPHS 596) to satisfy elective hours. Up to 5 semester hours (SH) of independent study may be credited for graduation for programs of study requiring 48 SH. For degree programs requiring greater than 48 SH, 1 SH of independent study may be credited toward graduation for each additional 5 SH of formal course work taken, to a maximum of 9 SH.

The Culminating Experience

Thesis Research (IPHS 598): MS students in Environmental and Occupational Health Sciences, Epidemiology, and Health Policy and Administration must complete a master's thesis. Registration is required in IPHS 598 - Research in Public Health Sciences. (Hours vary by division and concentration; see program specific information for details).

Selection of Thesis Advisor and Thesis Examining Committee: Before undertaking research leading to the required thesis, the student, with the assistance and approval of his/her major advisor, must select a Thesis Advisor, who must be a member of the Graduate College Faculty. In conjunction with the Thesis Advisor, the student selects the Thesis Examining Committee, subject to the final approval of the major advisor, Division Director, SPH Director of Graduate Studies, and the Graduate College. This committee consists of at least three (3) members, one (1) of whom must be a tenured full member of the Graduate College faculty. One committee member may be selected from outside the School of Public Health.

Thesis Proposal: The members of the Thesis Examining Committee will meet with the student to approve the thesis proposal, and to determine that the student is adequately prepared to undertake it. The thesis research may emphasize theoretical, laboratory, field, or computer-based investigations, but it should be feasible to complete in two to three semesters of full-time work. The members of the committee then provide guidance and assistance throughout the research experience of the student.

It is strongly advised that no more than one semester elapse following completion of course work before approval of the thesis proposal.

Preparation for Thesis Approval: Students should seek the guidance of their advisors and the Graduate College at an early stage of thesis preparation. *It is highly recommended that MS students at the point of beginning work on their thesis obtain a copy of the Graduate College brochure,* "Instructions for Completing Graduate College Degree Requirements and Preparation of Theses." This handbook is available online. The handbook provides instruction for final thesis preparation and format approval. The student and advisor are responsible for the thesis content and style. Failure to follow guidelines within the Graduate College theses manual may delay a student's certification for graduation.

Final Oral Examination: When a student has completed the thesis research work and a final draft of the thesis, s/he should request the advisor to convene the Thesis Examining Committee to conduct the final exam and for review and approval of the thesis for content. When the student and major advisor agree that the student is prepared, the advisor assembles the Thesis Examining Committee to conduct a final oral examination. The Thesis Examining Committee examines the student in a private session, indicating to the student whether any further work or revision of the thesis is required. The examination is then open to faculty and students for an oral presentation of the student's research. Finally, the Thesis Examining Committee reports its decision on the "Certificate of Approval" form which is signed and dated by the members and the advisor. The decision may be that the student has or has not passed his/her examination and thus has or has not satisfied all requirements for the MS degree. A candidate cannot be passed if more than one vote of "fail" is reported. The signed report is returned to the Academic Coordinator who assures that it is received by the SPH Office of Student Affairs. The SPH Director of Graduate Studies signs off as final approval upon successful completion of the thesis format review, and the signed Certificate is then forwarded to the Graduate College to conclude the process. Upon approval of Dr. Lorraine Conroy, the Director of Graduate Studies for the Department of Public Health Sciences, the student is recommended to the Graduate College for award of the degree.

MS Bypass Procedure to PhD: With the approval of the student's advisor and Division Director, a student may choose to enter the PhD program and not undertake the MS thesis. A written letter of application must be made to justify this transfer. The Division admissions committee will review the justification letter and an accompanying transcript. Recommendations for approving the bypass will be made to the SPH Director of Graduate Studies (Dr. Lorraine Conroy) for approval and transmission to the Graduate College for final approval. A list of courses to be transferred to the PhD program must accompany the justification letter and approval.

BSTT Comprehensive Exam: MS Biostatistics students substitute a comprehensive examination for the thesis. Please see Biostatistics MS Degree Program for more information.

THE MS CURRICULUM BY DIVISION

Biostatistics

The MS in Biostatistics program requires a minimum of 48 semester hours (SH) and is designed for completion in 2 years when enrolled full-time. This program includes the following course requirements:

School-Wide Core Requirements (6 SH)

Course	Title	Credits
EPID 403	Introduction to Epidemiology: Principles and Methods	3 SH
IPHS 520	Foundations of Public Health	3 SH
	MS Comprehensive Examination	
Required Non-Credit Training		
Information Privacy & Security (https://about.citiprogram.org/en/course/health-privacy/) Register for the University of Illinois, Chicago		Non-credit
Human Subjects Research (https://about.citiprogram.org/en/homepage) HSR Register for the University of Illinois, Chicago		Non-credit
Title IX Training		Non-credit
Academic Integrity Tutorial		Non-credit

Divisional Core Requirements (37 SH)

Course	Title	Credits
BSTT 506	Design of Clinical Trials	3 SH
BSTT 523	Biostatistics Methods I	4 SH
BSTT 524	Biostatistics Laboratory	2 SH
BSTT 525	Biostatistics Methods II	4 SH
BSTT 535	Categorical Data Analysis	3 SH
BSTT 536	Survival Analysis	3 SH
BSTT 537	Longitudinal Data Analysis	4 SH
BSTT 538	Biostatistical Consulting	2 SH
BSTT 550	Biostatistical Investigations	4 SH
STAT 401	Introduction to Probability	4 SH
STAT 411	Statistical Theory	4 SH

Electives (minimum 5 SH)

All students must complete a minimum of 5 semester hours of electives.

Electives can be any graduate level course of the students choosing.
BSTT 400, BSTT 401, BSTT 410, and BSTT 505 are not suitable electives.

MS Comprehensive Examination – All Biostatistics Students

All MS students in biostatistics take a comprehensive exam at the end of their second program year. This exam consists of two parts. The first part, a three-hour written exam, will cover basic methodological material from the required biostatistics and mathematics courses. The second part will be a seven day take-home exam in which the student is tested on the ability to perform data analysis and to describe and discuss the results.

Performance Standards: 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; however it should be noted that nearly all of the courses required for the MS in Biostatistics are offered only once a year and must be taken in a particular sequence, so re-taking a course is likely to delay graduation by a full year.

Environmental and Occupational Health Sciences

The MS in Environmental and Occupational Health Sciences program requires a minimum of 48-50semester hours (SH). This program is designed for completion in 2 years when enrolled full-time and includes the following course requirements:

School-Wide Core Requirements (22 SH)

Course	Title	Credits
BSTT 400	Biostatistics I	4 SH
EPID 403	Introduction to Epidemiology: Principles and Methods	3 SH
IPHS 520	Foundations of Public Health	3 SH
IPHS 598	Research in the Public Health Sciences – MS	12 SH
Required Non-Credit Training		
Information Privacy & Security (https://about.citiprogram.org/en/course/health-privacy/) Register for the University of Illinois, Chicago		Non-credit
Human Subjects Research (https://about.citiprogram.org/en/homepage) HSR Register for the University of Illinois, Chicago		Non-credit
Title IX Training		Non-credit
Academic Integrity Tutorial		Non-credit

Divisional Core Requirements (26-28 SH)

All students are required to take BSTT 401 - Biostatistics II (4 SH)

Course	Title	Credits
EOHS 401	Ethics and Justice in Environmental and Occupational Health	2 SH
EOHS 402	Systems Approaches in Environmental and Occupational Health	4 SH
EOHS 440	Chemistry for Environmental Professionals	3 SH
EOHS 495	Environmental and Occupational Health Sciences Seminar	1 SH
EOHS 501	Exposure Assessment Strategies	3 SH
EOHS 502	Environment, Toxicology, and Disease	4 SH
EOHS 556	Risk Assessment in Environmental and Occupational Health	3 SH
Computing Skills Selective (2-4 SH)		
Select **at least one** of the following courses:		
BSTT 494	Intro to Data Analysis with R	4 SH
BSTT 568	Programming and Simulation in R	2 SH
BSTT 594	Big Data Analytics	3 SH
EOHS 436	GIS for Environmental and Public Health Professionals	4 SH
EOHS 475	Health Related Database Design and Analysis	4 SH
EOHS 565	Datamining Applications in Public Health	3 SH
EOHS 571	Injury Epidemiology and Prevention	3 SH
EPID 406	Epidemiologic Computing	3 SH
UPP 461	Geographic Information Systems for Planning	4 SH

Electives (as needed to bring the program total to 54 SH)

Students are advised to carefully select courses with their advisor to assure adequate background for MS research and to assure adequate depth in a specific area of the wide field of EOHS.

NOTE: The MS curriculum for EOHS and concentrations is pending campus approval for Fall 2018.
All students must complete a program **minimum of 9 semester hours** of coursework at the 500-level; not counting IPHS 598 Research Hours.

Optional Concentrations

Students may select from the following concentrations, or may build a general program of study within EOHS, in conjunction with their faculty advisor.

ASAC ABET-Accredited Program in Industrial Hygiene (53 SH)

Students applying to the primary concentration in Environmental and Occupational Health Sciences must have completed one year of college math and one year of chemistry, biology, or physics. Those interested in the ASAC-ABET Accredited MPH Program in Industrial Hygiene must meet the criteria listed above. In addition, applicants should have completed coursework in college-level mathematics, biology, general and organic chemistry, and physics. Exceptions may be granted for applicants with relevant works experience or high-level academic achievements. Exceptions may be admitted with an individually documented plan of study to compensate for deficiencies, although applicants are strongly encouraged to satisfy all deficiencies prior to matriculation. Applicants are invited to consult with the Industrial Hygiene Program Director about possible deficiencies.

Student's must complete the School-Wide Core Requirements and a sufficient number of the following courses as part of their divisional and elective choices as necessary to attain 53 SH of credit. In addition, students must adhere to the divisional requirements as stipulated for their individual program of study.

Industrial Hygiene Core (31 SH)		
Course	**Title**	**Credits**
EOHS 401	Ethics and Justice in Environmental and Occupational Health	2 SH
EOHS 402	Systems Approaches in Environmental and Occupational Health	4 SH
EOHS 421	Occupational Health and Safety Practice	2 SH
EOHS 424	Evaluation and Control of Radiation Exposures	1 SH
EOHS 425	Evaluation and Control of Physical Agents	2 SH
EOHS 426	Evaluation and Control of Airborne Contaminants	4 SH
EOHS 427	Evaluation and Control of the Psychosocial Work Environment	2 SH
EOHS 495	Environmental and Occupational Health Sciences Seminar	1 SH
EOHS 501	Exposure Assessment Strategies	3 SH
EOHS 502	Environment, Toxicology, and Disease	4 SH
EOHS 556	Risk Assessment in Environmental and Occupational Health	3 SH
EOHS 563	Occupational Safety and Health Management Systems	3 SH

Additional Requirements for Students Enrolled in ASAC-ABET - Accredited Industrial Hygiene Program Trainees are required to:

Every year-

- Attend all weekly Illinois ERC Interdisciplinary Seminars (EOHS 495) (held weekly throughout the academic year)
- Attend at least 3 hr of Occupational Medicine Clinic per semester
- Attend at least 4 Industrial Process Tours each year
- Participate actively in at least one Illinois ERC Targeted Research Training Team each semester

Once during the program:

- Present an Industrial Process Talk (scheduled during the ERC Seminar)

Occupational Safety (52 SH)

Note, prerequisite course work for entering the Occupational Safety program should be completed in the first year and includes a full year of general chemistry, at least one semester of organic chemistry, mathematics through differential and integral calculus, and a course in human physiology.

Students must complete the School-Wide Core Requirements and a sufficient number of the following courses as part of their divisional and elective choices as necessary to attain 52 SH of credit. In addition, students must adhere to the divisional requirements as stipulated for their individual program of study.

Occupational Safety Courses (30 SH)		
Course	**Title**	**Credits**
EOHS 401	Ethics and Justice in Environmental and Occupational Health	2 SH
EOHS 402	Systems Approaches in Environmental and Occupational Health	4 SH
EOHS 421	Occupational Health and Safety Practice	2 SH
EOHS 424	Evaluation and Control of Radiation Exposures	1 SH
EOHS 425	Evaluation and Control of Physical Agents	2 SH
EOHS 427	Evaluation and Control of the Psychosocial Work Environment	2 SH
EOHS 495	Environmental and Occupational Health Sciences Seminar	1 SH
EOHS 501	Exposure Assessment Strategies	3 SH
EOHS 502	Environment, Toxicology, and Disease	4 SH
EOHS 503	Occupational Safety	2 SH
EOHS 504	Occupational Ergonomics and Biomechanics	1 SH
EOHS 563	Occupational Safety and Health Management Systems	3 SH
EOHS 571	Injury Epidemiology and Prevention	3 SH

Additional Requirements for Students Enrolled in Occupational Safety Concentration

Trainees are required to:

Every year-

- Attend all weekly Illinois ERC Interdisciplinary Seminars (EOHS 495) (held weekly throughout the academic year)
- Attend at least 3 hr of Occupational Medicine Clinic per semester
- Attend at least 4 Industrial Process Tours each year
- Participate actively in at least one Illinois ERC Targeted Research Training Team each semester

Once during the program:

- Present an Industrial Process Talk (scheduled during the ERC Seminar)

Epidemiology

The MS in Epidemiology program requires a minimum of 50 semester hours (SH). This program is designed for completion in 2 years when enrolled full-time and includes the following course requirements:

School-Wide Core Requirements (18 SH)

Course	Title	Credits
BSTT 400	Biostatistics I	4 SH
EPID 403	Introduction to Epidemiology: Principles and Methods	3 SH
IPHS 520	Foundations of Public Health	3 SH
IPHS 598	Research in the Public Health Sciences – MS	8 SH
Required Non-Credit Training		
Information Privacy & Security (https://about.citiprogram.org/en/course/health-privacy/) Register for the University of Illinois, Chicago		Non-credit
Human Subjects Research (https://about.citiprogram.org/en/homepage) HSR Register for the University of Illinois, Chicago		Non-credit
Title IX Training		Non-credit
Academic Integrity Tutorial		Non-credit

Divisional Core Requirements (16-17 SH)

Course	Title	Credits
BSTT 401	Biostatistics II	4 SH
EPID 404	Intermediate Epidemiologic Methods	4 SH
EPID 406	Epidemiologic Computing	3 SH
EPID 591	Current Epidemiologic Literature	2 SH
EPID 595	Epidemiology Research Seminar	1 SH
Select **one** of the following courses:		
BSTT 505	Logistic Regression and Survival Analysis	2 SH
BSTT 506	Design of Clinical Trials	3 SH

Electives (as needed to bring the program total to 50 SH)

Students may use their electives to pursue a course of study in one of the following optional concentrations; or may customize their program of study by selecting from a broad range of course work to meet their career goals and interests. All students must complete sufficient elective hours to bring their total program of study to a 50 SH minimum.

Performance Standards: 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.

Optional Concentrations

Occupational and Environmental Epidemiology Concentration in EPID (55 SH)

Students must complete the School-Wide Core Requirements above as well as 38 semester credit hours from the following concentration 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.

Occupational and Environmental Epidemiology Courses (33 SH)		
Course	**Title**	**Credits**
EOHS 421	Occupational Safety and Health Practice	2 SH
BSTT 401	Biostatistics II	4 SH
EPID 404	Intermediate Epidemiologic Methods	4 SH
EPID 406	Epidemiologic Computing	3 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
EPID/EOHS 571	Injury Epidemiology and Prevention	3 SH
EPID 594	Applied Methods for the Analysis of Epidemiologic Data	4 SH
EPID 411	Epidemiology of Chronic Diseases	3 SH
EOHS 501	Exposure Assessment Strategies	3 SH
EOHS 495	Environmental/Occupational Health Seminar (students must participate in each semester, but need only enroll for credit in one semester)	1 SH
Electives: minimum additional electives required		4 SH

Cancer Epidemiology (50 SH)

Students electing the Cancer Epidemiology concentration must complete the School-Wide Course Requirements as well as 35 semester credit hours of the following concentration courses:

Concentration Core Requirements

Course	**Title**	**Credits**
BSTT 401	Biostatistics II	4 SH
BSTT 505	Survival Analysis and Logistic Regression	2 SH
EPID 404	Intermediate Epidemiologic Methods	4 SH
EPID 406	Epidemiologic Computing	3 SH
EPID 515	Survey of Cancer Epidemiology	3 SH
EPID 591	Current Epidemiologic Literature	2 SH
EPID 595	Epidemiology Research Seminar	1 SH
Select **two** of the following courses:		
EPID 520	Genetics in Epidemiology	2 SH
EPID 554	Occupational and Environmental Epidemiology	2 SH
EPID 594	Advanced Special Topics in Epidemiology: Social Epidemiology	2 SH
EPID 550	Advanced Special Topics in Epidemiology: Surveillance Epidemiology	2 SH

Cancer Epidemiology Electives (8-10 SH)
Students must take a minimum of 11-12 SH of electives as necessary to reach minimum of 50 total program hours.

MS Thesis Research Requirements: The MS Thesis in Epidemiology at UIC SPH is intended to prepare the student to conduct epidemiology studies as a part of a research team. The thesis process involves a) developing a thesis proposal in conjunction with a thesis advisor and committee, and b) completion of the research, writing, and defense of the dissertation. With the assistance of the advisor, the student should select appropriate faculty for his/her thesis committee. The committee must be comprised of three members at a minimum, with at least one member a tenured faculty. The members of the thesis committee will meet with the student to approve the thesis proposal, and to determine that the student is adequately prepared to undertake it.

The student may generate his or her own research hypothesis or work with a faculty member who outlines a research hypothesis. The use of existing data to test a hypothesis using standard epidemiological study designs and analytic techniques is recommended. However, other formats (e.g. descriptive studies and studies with limited field work), may be acceptable. It is anticipated that the thesis results will be suitable for publication in a peer reviewed scientific journal.

Performance Standards: In addition to school-wide standards, no grade below "B" is acceptable in any Divisional 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 Analytics

The MS in Health Analytics program emphasizes developing objective solutions in public and global health. The Health Analytics program requires a minimum of 48 semester hours (SH). This program is designed for completion in 2 years when enrolled full-time and includes the following course requirements:

School-Wide Core Requirements (6 SH)

Course	Title	Credits
EPID 403	Introduction to Epidemiology: Principles and Methods	3 SH
IPHS 520	Foundations of Public Health	3 SH
Required Non-Credit Training		
Information Privacy & Security (https://about.citiprogram.org/en/course/health-privacy/) Register for the University of Illinois, Chicago		Non-credit
Human Subjects Research (https://about.citiprogram.org/en/homepage) HSR Register for the University of Illinois, Chicago		Non-credit
Title IX Training		Non-credit
Academic Integrity Tutorial		Non-credit

Divisional Requirements (32 SH)

Course	Title	Credits
STAT 401	Introduction to Probability	4 SH
STAT 411	Statistical Theory	4 SH
BSTT 494	Introduction to Data Analysis using R	2 SH
BSTT 523	Biostatistics Methods	4 SH
BSTT 525	Biostatistics Methods II	4 SH
BSTT 535	Categorical Data Analysis	3 SH
BSTT 426	Health Data Analytics by Python programming	3 SH
BSTT 527	Statistical Learning in Health Analytics	3 SH
BSTT 528	Machine Learning in Health Analytics	3 SH
BSTT 529	Health Analytics Investigations	2 SH

Electives (10 SH)

Recommended electives

- BSTT 536: Survival Analysis (3 SH)
- BSTT 537: Longitudinal Data Analysis (4 SH)
- One additional elective (3 SH)

Interdepartmental Concentrations

The School of Public Health offers five Interdepartmental Concentrations for MS students to participate in.

Interdepartmental Concentration	CHS	EOHS	Epidemiology
Gender and Women's Studies	x	x	x
Global Health	x	x	x
Survey Research	x	x	x
Violence Studies	x	x	x
Women's Health	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
jbier@uic.edu

Global Health Concentration

The Global Health Concentration is designed to attract students at the master's level who are interested in preparing for international careers in government, health care agencies, NGOs, industry, and academic institutions. International students who undertake the concentration will be better prepared to return to their home countries to work in the country's ministry of health, international governmental agencies, and other health care organizations.

At the conclusion of the concentration, students will be able to:

- Demonstrate knowledge of the Social Determinants of Health (SDH) and their contribution to the health of populations globally, as well as the influence of SDH (including economic, political and environmental) on programmatic approaches in international settings.
- Demonstrate critical understanding of the major causes of morbidity and mortality around the world, and explain how the risk for disease varies within and across regions.
- Describe the roles and relationships of the major entities influencing global health and development, and how they work to address communicable and non-communicable diseases, including injury, given context specific challenges within countries and regions.
- Demonstrate an ability to use systems thinking to analyze programs at the local, national and international levels.
- Demonstrate a vision and philosophy of ethical professional practice that address health equities and human rights in global health.

Upon admission to the SPH division of their choice (CHS, EPID, BSTT, EOHS or HPA), students apply to the Global Health Concentration through submission of a Global Health Concentration Application and current resume. With proper planning the concentration can be completed during the same time period required for the MS program.

In addition to MS program requirements, students pursuing the Global Health Concentration must complete a minimum of 9 semester hours consisting of the following courses:

Concentration Course Requirements (6 SH)

Course	Title	Credits
IPHS 409*	Global Public Health Challenges	3 SH
IPHS 410**	Global Public Health Solutions	3 SH

* Offered in fall term.
** Offered in spring term.
Courses need not be taken sequentially.

Electives (3 SH)

Taking a cross-disciplinary approach to public health, the Global Health Concentration draws upon course work and other resources throughout UIC that will help GH students to deepen their knowledge and understanding of the challenges, issues, and skills required to successfully address health problems globally. Selection of an elective should be made with the help of the student's academic advisor.

For a current listing of approved Global Health Elective Courses, students should contact Chelsea Peters, Global Health Program Advisor at chelseap@uic.edu.

Please note that registration is subject to the offering department's approval. Additionally, the student's thesis topic must have a global focus.

Contact Information

Alyson Lofthouse, MUPP
Senior Associate Director, Global Health Program
(312) 996-0054
alofth2@uic.edu

Chelsea Peters, MPH
Program Advisor, Global Health Program
(312) 355-3219
chelseap@uic.edu

Also, visit the School of Public Health Global Health website at http://publichealth.uic.edu/global-health-program

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.

Foundational Courses (minimum 5 SH)

Course	Title	Credits
EPID 428	Epidemiology of Violence	3 SH
CLJ 423/ANTH 424	Violence	3 SH
CLJ 546	Violence and Victimization	3 SH
SOCW 544	Community Violence	4 SH
GWS/PSCH 521	Violence Against Women	2 SH

Supplementary Courses (minimum 6 SH)

Course	Title	Credits
CLJ 422	Victimization	3 SH
CLJ/GWS 424	Gender, Crime, and Justice	3 SH
CLJ 500	Law and Society	3 SH
POLS 571	Seminar in International Relations	4 SH
PSCH 417	Psychology and Law	2 SH
SOCW 517	Practice with Family Violence, Neglect, and Abuse	3 SH
SOCW/GWS 525	Social Work with Women	3 SH

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 a multidisciplinary perspective on 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 the master's 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:

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MS DEGREE COMPETENCIES

The Master of Science (MS) degree in Public Health Sciences prepares individuals to enter academic, research, or professional careers pertaining to broad areas of public health concern. It is the appropriate route for continuing studies leading to the PhD degree. Academic preparation is offered through a broad spectrum of public health courses and related research from which students can fashion individualized curricula to meet highly specialized objectives. Integrated with the course work (in all areas but biostatistics) is a research project, the findings of which must be described in a research thesis. Interdisciplinary studies that combine two or more of the School's program areas are encouraged.

The MS degree is awarded under the University of Illinois at Chicago Graduate College. For the purposes of this degree program, the School of Public Health acts as the Department of Public Health Sciences (DPHS) of the Graduate College. All requirements related to the degree, as described in the UIC Graduate Study Catalog, must be met.

MS students will achieve the following competencies during completion of the MS program in public health:

1. Explain public health history, philosophy and values
2. Identify the core functions of public health and the 10 Essential Services
3. Explain the role of quantitative and qualitative methods and sciences in describing and assessing a population's health
4. List major causes and trends of morbidity and mortality in the US or other community relevant to the school or program
5. Discuss the science of primary, secondary and tertiary prevention in population health, including health promotion, screening, etc.
6. Explain the critical importance of evidence in advancing public health knowledge
7. Explain effects of environmental factors on a population's health
8. Explain biological and genetic factors that affect a population's health
9. Explain behavioral and psychological factors that affect a population's health
10. Explain the social, political and economic determinants of health and how they contribute to population health and health inequities
11. Explain how globalization affects global burdens of disease
12. Explain an ecological perspective on the connections among human health, animal health and ecosystem health (e.g., One Health)

Biostatistics: MS Competencies

The MS student in Biostatistics should attain skills in the practice of biostatistics for research in academic, government, and industry settings. In addition to schoolwide competencies for all MS graduates in Public Health, the MS graduate in Biostatistics will be able to:

1. Demonstrate knowledge of the theoretical basis for standard biostatistical methods and the methods themselves, with consideration of strengths, limitations, and standard diagnostic tools
2. Illustrate the ability to evaluate and interpret scientific literature
3. Appropriately assess the biostatistical needs of clients, crystallizing the research question, selecting an appropriate approach to the analysis and conducting a focused analysis
4. Communicate effectively about biostatistical methods, results and interpretation

Environmental and Occupational Health Sciences: MS Competencies

In addition to school-wide competencies, for students pursuing the MS degree in Environmental and Occupational Health Sciences, the following competencies apply:

1. Demonstrate knowledge and understanding of a well-defined public health discipline and its connection to, and impact on, public health
2. Express understanding of discipline-specific theoretical constructs, research design, research methodology and analytical strategies
3. Illustrate the ability to evaluate and interpret scientific literature
4. Participate in an original research project that makes a contribution to the body of knowledge of their discipline
5. Exhibit the ability to disseminate research findings to the scientific community and the general public

ABET-Accredited Industrial Hygiene Concentration

In addition to the EOHS MS competencies, students in the **ABET-Accredited Industrial Hygiene** concentration have both applied science and industrial hygiene competencies. :

Applied Science Knowledge and Skills At the completion of the Industrial Hygiene MS degree, we expect students to have the following applied science knowledge and skills:

1. Apply knowledge of mathematics, science, and applied sciences
2. Design and conduct experimental investigations
3. Analyze and interpret data
4. Formulate or design a system, process or program to meet desired needs
5. Function on multi-disciplinary teams
6. Identify and solve applied science problems
7. Demonstrate professional and ethical responsibility
8. Communicate effectively
9. Describe the impact of solutions in a global and societal context
10. Recognize the need for engaging in life-long learning
11. Discuss and critique contemporary issues relevant to environmental and occupational health
12. Use the techniques, skills, and modern scientific and technical tools necessary for professional practice

Industrial Hygiene Knowledge and Skills In addition, we expect graduating MS students to have the following industrial hygiene knowledge and skills:

1. Identify agents, factors, and stressors generated by or associated with defined sources, unit operations or processes
2. Describe qualitative and quantitative aspects of generation of agents, factors, and stressors
3. Recognize, analyze and evaluate the physiological and toxicological interactions of physical, chemical, biological, and ergonomic agents, factors, and stressors with the human body
4. Apply qualitative and quantitative methods to assess exposures through multiple routes of entry
5. Understand dose-response models and regulatory approaches to risk assessment
6. Integrate exposures with dose-response models to estimate health risk through multiple routes of entry
7. Compare exposure and risk estimates with guidelines and regulations to characterize the magnitude of health hazard
8. Employ statistical methods to analyze and interpret data
9. Apply epidemiologic methods to interpret exposure-health outcome relationships
10. Recommend and evaluate engineering, administrative, and personal protective equipment controls and other interventions to reduce or eliminate hazards
11. Apply management practices to health and safety programs
12. Be able to make a business case for workplace health and safety
13. Interpret and apply occupational and environmental regulations
14. Appreciate and apply a multi-disciplinary perspective that includes occupational safety, occupational medicine, occupational health nursing, environmental health, occupational and environmental epidemiology and injury prevention.
15. Recognize the importance of life-long learning and attaining professional certification
16. Describe conceptual models used in the assessment, evaluation and control of occupational hazards
17. Apply conceptual and mathematical models to the assessment, evaluation and control of occupational hazards

Epidemiology: MS Competencies

In addition to the school-wide competencies, for students pursuing the MS degree in Epidemiology, the following competencies apply:

1. Exhibit the ability for problem conceptualization and study design.
2. Demonstrate critical reading skills and the ability to synthesize epidemiological and related biological information.
3. Illustrate the ability to write reports from studies that are suitable for publication in scientific journals.

Cancer Epidemiology concentration

Additionally, the **Cancer Epidemiology** concentration is intended to provide specialized training to enable MS students:

1. Describe and characterize the major known determinants of cancer;
2. Describe, locate, analyze and interpret existing data relevant to cancer;
3. Understand the strengths and weaknesses of alternative epidemiologic study designs in the context of cancer research;

4. Work within a multidisciplinary team to study behavioral, environmental, infectious, nutritional and/or genetic factors involved in cancer etiology.

Occupational and Environmental Epidemiology Concentration

In addition to the school-wide competencies, for students pursuing the **Occupational and Environmental Epidemiology** concentration, the following competencies apply:

1. Characterize the major known determinants of occupational and environmental diseases and injuries
2. Analyze and interpret existing data relevant to occupational and environmental diseases, injuries, exposures and interventions
3. Describe the strengths and weaknesses of alternative designs used for occupational and environmental epidemiological research
4. Assess health and safety risks arising from an occupational or environmental health problem
5. Summarize findings of research in oral and written form
6. Work with a multidisciplinary team of environmental health scientists

Health Policy and Administration: MS Competencies

In addition to the school-wide competencies, for students pursuing the MS degree in Health Policy and Administration, the following competencies apply:

1. Demonstrate knowledge of the theoretical and historical foundations of health services and policy research.
2. Demonstrate mastery in basic statistical methods and epidemiology.
3. Demonstrate facility in advanced statistical methods, software use, and research design.
4. Demonstrate knowledge of principles, models and practical methods for the economic evaluation of health care services.
5. Discuss the role of government and government policies in the health care market.

MASTER OF SCIENCE IN CLINICAL AND TRANSLATIONAL SCIENCE (MS CTS)

The School of Public Health offers work leading to the Master of Science in Clinical and Translational Science (MS CTS). The degree is intended to train clinicians, primarily post-doctoral or post-residency fellows and junior faculty, to become leaders in clinical research. In addition, the School participates with the College of Dentistry in offering the DMD/MS CTS joint degree program; with the College of Medicine in offering the MD/MS CTS joint degree program; with the College of Pharmacy in offering the PharmD/MS CTS joint degree program; and with the National University of Health Sciences in offering a coordinated DC/MS CTS degree program.

The MS CTS program requires a minimum of 48 semester hours (SH). The program is designed for completion in 2 years when enrolled full-time and includes the following course requirements:

Required Courses (26 SH)

Course	Title	Credits
BHIS 509	Informatics for the Clinical Investigator	3 SH
BSTT 400	Biostatistics I	4 SH
BSTT 401	Biostatistics II	4 SH
EPID 403	Introduction to Epidemiology: Principles and Methods	3 SH
HPA 522	Public Health Research Design and Methods	3 SH
HPA 526	Leadership and Diversity in Clinical Research	2 SH
HPA 591	Grant Writing for New Investigators	3 SH
GC 501	Scientific Integrity and Responsible Research	1 SH
IPHS 520	Public Health Frameworks for Researchers	3 SH
IPHS 598	Research in the Public Health Sciences – MS*	16 SH

Required Non-Credit Training	
Information Privacy & Security (https://about.citiprogram.org/en/course/health-privacy/) Register for the University of Illinois, Chicago	Non-credit
Human Subjects Research (https://about.citiprogram.org/en/homepage) HSR Register for the University of Illinois, Chicago	Non-credit
Title IX Training	Non-credit
Academic Integrity Tutorial	Non-credit

Electives (6 SH)

All students must complete a minimum of 6 semester hours of electives selected from across disciplines at UIC. With input from their advisor and mentor, students will choose appropriate electives that are tailored to their unique backgrounds, skill levels, areas of interest, research focus, and future goals. At least 9 semester hours must be 500-level courses excluding thesis or independent study.

MS Thesis Research Requirements: Sixteen credits of mentored research (IPHS 598-Research) must be completed in two to three semesters of full time work leading to the completion of a publishable paper and a research proposal. The research must be completed under the supervision of an approved clinical investigator and with the approval of a mentorship committee designed specifically for each student.

Final Oral Examination: The final oral examination consists of a presentation of the student's research findings at an open meeting of students and faculty and a separate oral examination in the academic division by the student's Thesis Examining Committee. The presentation should be based on the publishable paper and research proposal products of the student's clinical research project.

Degree Completion Deadline: MS CTS students must complete all of the requirements within six calendar years after their initial registration in the Graduate College. Students pursuing more than one degree at the same time will be allowed an additional two years. Time spent on a leave of absence approved by the School 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).

Joint Degree Options

The School of Public Health offers four joint or coordinated degree programs which allow students to complete both an MS in Clinical and Translational Science and a second professional degree in a shortened timeframe.

Joint Degree	Availability of Joint Degree Programs by Division				
	CHS	EOHS	Epi	Bio	HPA
DC/MS CTS					X
DMD/MS CTS					X
MD/MS CTS					X
PharmD/MS CTS					X

DC/MS CTS

The UIC School of Public Health (SPH) and the National University of Health Sciences (NUHS) offer a coordinated program leading to the Doctor of Chiropractic (DC) and the Master of Science in Clinical Translational Science (MS CTS).

The program of study leading to the DC/MS CTS coordinated degree is offered by the Health Policy and Administration Division.

Program Goals: The program is designed to prepare doctoral students of chiropractic with the skills required to combine clinical knowledge with the knowledge and skills needed for careers as researchers in the clinical and translational sciences. Graduates will be eligible for further training in specialty programs and will be able to advance successfully to tenure-track positions in complementary and alternative medical institutions that encourage Complementary and Alternative Medicine (CAM) research to propel and support the CAM health care professions that require research for promotion.

Length of Program: Full time students may complete the programs in four and one-half years including twelve trimesters of required DC course work, concurrent UIC SPH courses and one full time semester at UIC.

Program Requirements: Students must complete a minimum of 48 semester hours of course work at SPH to satisfy the requirements of the MS CTS degree in addition to all the requirements of the NUHS DC degree. Students' work at UIC may qualify for up to twelve hours of elective credit at the National University of Health Sciences, depending on the specific courses chosen and applicability to the elective credit required for the NUHS DC program. Students will be required to meet all other curricular requirements of both NUHS and the UIC SPH division.

Students are strongly encouraged to begin studies at both schools in the Fall term. Students receiving financial aid through NUHS will be designated as students with NUHS as the “home” school and UIC as the “host school” through an NUHS – UIC consortium agreement.

Admission Requirements: Students must apply to and be admitted separately to both the School of Public Health and the National University of Health Sciences Doctor of Chiropractic degree program. The policies of each program with respect to admission requirements, degree requirements, and other academic requirements are applicable.

To be considered for admission students must take the GRE, have earned a baccalaureate degree from an accredited institution, and satisfy other application requirements for each institution.

Applicants must be accepted into both schools and complete the DC/MS CTS application available from the NUHS Thomas Grieve, DC, MPH, phone: (630) 889-6442, tgrieve@nuhs.edu.

Requirements for the MS CTS portion of the degree are as follows:

School-Wide Core Requirements (26 SH)

Course	Title	Credits
BSTT 400	Biostatistics I	4 SH
EPID 403	Introduction to Epidemiology: Principles and Methods	3 SH
IPHS 520	Public Health Frameworks for Researchers	3 SH
IPHS 598	Research in the Public Health Sciences – MS*	16 SH
Required Non-Credit Training		
Information Privacy & Security (https://about.citiprogram.org/en/homepage) IPS Register for the University of Illinois, Chicago		Non-credit
Human Subjects Research (https://about.citiprogram.org/en/homepage) HSR Register for the University of Illinois, Chicago		Non-credit
Investigator Training 101		Non-credit
Academic Integrity Tutorial		Non-credit

Divisional Core Requirements (12 SH)

Course	Title	Credits
BHIS 509	Informatics for the Clinical Investigator	3 SH
BSTT 401	Biostatistics II	4 SH
HPA 522	Public Health Research Design and Methods	3 SH
HPA 526	Leadership and Diversity in Clinical Research	2 SH
HPA 590	Grant Writing	1 SH
GC 501	Scientific Integrity and Responsible Research	1 SH

Electives (9 SH)

All students must complete a minimum of 9 semester hours of electives selected from across disciplines at UIC. With input from their advisor and mentor, students will choose appropriate electives that are tailored to their unique backgrounds, skill levels, areas of interest, research focus, and future goals. At least 9 semester hours must be 500-level courses excluding thesis or independent study.

MS Thesis Research Requirements: Sixteen credits of mentored research (IPHS 598-Research) must be completed in two to three semesters of full time work leading to the completion of a publishable paper and a research proposal. The research must be completed under the supervision of an approved clinical investigator and with the approval of a mentorship committee designed specifically for each student.

Final Oral Examination: The final oral examination consists of a presentation of the student's research findings at an open meeting of students and faculty and a separate oral examination in the academic division by the student's Thesis Examining Committee. The presentation should be based on the publishable paper and research proposal products of the student's clinical research project.

Shared Courses

- With proper planning and advisement, DC/MS CTS students may apply a maximum of 12 semester hours of MS CTS electives to DC elective requirements.
- No more than 12 total hours will consist of shared coursework.

Contact Information: For further information about this joint degree program, please contact the following individuals:

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Jack Zwanziger, PhD
Professor, HPA Division
(312) 996-1062
jzwanzig@uic.edu

National University of Health Sciences
Thomas Grieve, DC, MPH
(630) 889-6442
tgrieve@nuhs.edu

DMD/MS CTS

The UIC College of Dentistry (COD) and the UIC School of Public Health offer a joint degree program leading to the Doctor of Dental Medicine (DMD) and Master of Science in Clinical and Translational Science (MS CTS) degrees.

The program of study leading to the DMD/MS CTS joint degree is offered by the Health Policy and Administration Division:

Length of Program: Full-time students may complete the degree in five years.

Admission Requirements: Must apply and be accepted to both the UIC College of Dentistry and UIC School of Public Health. Apply for joint degree program on admission application

Program Requirements: The joint degree program will be available to dental students with a timeline and mentored research requirement that will incorporate their clinical and research training. Interested dental students are encouraged to apply as soon as possible, preferably no later than May 1 of their first year in the DMD program (D1 year). Dental students choosing the joint program should be dedicated to the goals of both programs and of high academic talent to accomplish the goals and demands of the joint program. The program will typically require only one year beyond the commitment for the DMD degree.

Students in the program must satisfy requirements of the Masters of Science in Clinical and Translational Science, a 48 semester hour program, and satisfy four years of the required Doctor of Dental Medicine Degree program of study. Upon admission to the MS in CTS program, students will participate in a variety of seminars and workshops. They will be expected to continue to participate in these seminars and workshops until the completion of the joint program.

Requirements for the MS CTS portion of the joint degree are as follows

School-Wide Core Requirements (26 SH)

Course	Title	Credits
BSTT 400	Biostatistics I	4 SH
EPID 403	Introduction to Epidemiology: Principles and Methods	3 SH
IPHS 520	Public Health Frameworks for Researchers	3 SH
IPHS 598	Research in the Public Health Sciences – MS*	16 SH
Required Non-Credit Training		
Information Privacy & Security (https://about.citiprogram.org/en/homepage) IPS Register for the University of Illinois, Chicago		Non-credit
Human Subjects Research (https://about.citiprogram.org/en/homepage) HSR Register for the University of Illinois, Chicago		Non-credit
Investigator Training 101		Non-credit
Academic Integrity Tutorial		Non-credit

Divisional Core Requirements (12 SH)

Course	Title	Credits
BHIS 509	Informatics for the Clinical Investigator	3 SH
BSTT 401	Biostatistics II	4 SH
HPA 522	Public Health Research Design and Methods	3 SH
HPA 526	Leadership and Diversity in Clinical Research	2 SH
HPA 590	Grant Writing	1 SH
GC 501	Scientific Integrity and Responsible Research	1 SH

Electives (6 SH)

All students must complete a minimum of 6 semester hours of electives selected from across disciplines at UIC. With input from their advisor and mentor, students will choose appropriate electives that are tailored to their unique backgrounds, skill levels, areas of interest, research focus, and future goals. At least 9 semester hours must be 500-level courses excluding thesis or independent study.

MS Thesis Research Requirements: Sixteen credits of mentored research (IPHS 598-Research) must be completed in two to three semesters of full time work leading to the completion of a publishable paper and a research proposal. The research must be completed under the supervision of an approved clinical investigator and with the approval of a mentorship committee designed specifically for each student.

Final Oral Examination: The final oral examination consists of a presentation of the student's research findings at an open meeting of students and faculty and a separate oral examination in the academic division by the student's Thesis Examining Committee. The presentation should be based on the publishable paper and research proposal products of the student's clinical research project.

Shared Courses

- With proper planning and prior approval by the executive associate dean for academic affairs at the College of Dentistry, joint degree students may apply up to 4 hours of IPHS 598 toward DMD clinical rotation requirements (in both the D3 and D4 years).
- No more than 8 total hours will consist of shared coursework.

Contact Information:

School of Public Health

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College of Dentistry
Katherine Long
DMD/MS CTS Program Coordinator
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MD/MS CTS

The UIC College of Medicine (COM) and the UIC School of Public Health offer a joint degree leading to the Doctor of Medicine (MD) and Master of Science in Clinical and Translational Science (MS CTS) degrees.

The program of study leading to the MD/MS CTS joint degree is offered by the Health Policy and Administration Division:

Length of Program: Full-time students may complete the degree in five years.

Admission Requirements:

- Must apply and be accepted to both the UIC College of Medicine and UIC School of Public Health
- Apply for joint degree program on admission application
- Students will also be required to submit a joint degree application to the College of Medicine

Requirements for the MS CTS portion of the joint degree are as follows:

School-Wide Core Requirements (26 SH)

Course	Title	Credits
BSTT 400	Biostatistics I	4 SH
EPID 403	Introduction to Epidemiology: Principles and Methods	3 SH
IPHS 520	Public Health Frameworks for Researchers	3 SH
IPHS 598	Research in the Public Health Sciences – MS*	16 SH
Required Non-Credit Training		
Information Privacy & Security (https://about.citiprogram.org/en/homepage) IPS Register for the University of Illinois, Chicago		Non-credit
Human Subjects Research (https://about.citiprogram.org/en/homepage) HSR Register for the University of Illinois, Chicago		Non-credit
Investigator Training 101		Non-credit
Academic Integrity Tutorial		Non-credit

Divisional Core Requirements (12 SH)

Course	Title	Credits
BHIS 509	Informatics for the Clinical Investigator	3 SH
BSTT 401	Biostatistics II	4 SH
HPA 522	Public Health Research Design and Methods	3 SH
HPA 526	Leadership and Diversity in Clinical Research	2 SH
HPA 590	Grant Writing	1 SH
GC 501	Scientific Integrity and Responsible Research	1 SH

Electives (6 SH)

All students must complete a minimum of 9 semester hours of electives selected from across disciplines at UIC. With input from their advisor and mentor, students will choose appropriate electives that are tailored to their unique backgrounds, skill levels, areas of interest, research focus, and future goals. At least 9 semester hours must be 500-level courses excluding thesis or independent study.

MS Thesis Research Requirements: Sixteen credits of mentored research (IPHS 598-Research) must be completed in two to three semesters of full time work leading to the completion of a publishable paper and a research proposal. The research must be completed under the supervision of an approved clinical investigator and with the approval of a mentorship committee designed specifically for each student.

Final Oral Examination: The final oral examination consists of a presentation of the student's research findings at an open meeting of students and faculty and a separate oral examination in the academic division by the student's Thesis Examining Committee. The presentation should be based on the publishable paper and research proposal products of the student's clinical research project.

Shared Courses

- With proper advisement, MD/MS CTS students may apply a maximum of 8 semester hours of MS research hours (IPHS 598) during the M4 year toward MD M4 electives.
- With proper planning and prior approval of the MS advisor, joint degree students may take a non-clinical medical elective during their M4 year and receive independent study credit toward the MS degree.
- With proper planning and prior approval by the Dean of Educational Affairs within the COM, joint degree students may receive credit toward the M4 electives by taking an advanced-level public health course.
- No more than 12 total hours will consist of shared coursework.

Contact Information

School of Public Health
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College of Medicine
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PHARMD/MS CTS

The UIC College of Pharmacy (COP) and the UIC School of Public Health offer a joint degree program leading to the Doctor of Pharmacy (PharmD) and Master of Science in Clinical and Translational Science (MS CTS) degrees.

The program of study leading to the PharmD/MS CTS joint degree is offered by the Health Policy and Administration Division:

Length of Program: Full-time students may complete the degree in five years.

Admission Requirements:

- Must apply and be accepted to both the UIC College of Pharmacy and UIC School of Public Health
- Apply for joint degree program on admission application

Program Requirements: The joint degree program will be available to pharmacy students with a timeline and mentored research requirement that will incorporate their clinical and research training. Interested pharmacy students are encouraged to apply as soon as possible, preferably no later than May 1 of their first year in the PharmD program (P1 year) for those with a prior Baccalaureate degree, and no later than May 1 of their second year in the PharmD program (P2 year) for those without a prior Baccalaureate degree. Pharmacy students choosing the joint program should be dedicated to the goals of both programs and of high academic talent to accomplish the goals and demands of the joint program.

The program will typically require only one year beyond the commitment for the PharmD degree. Participating pharmacy students who have received a Baccalaureate degree prior to entry into the PharmD program can begin the didactic portion of the MS CTS program in the summer between their P1 and P2 years. PharmD students who did not receive a Baccalaureate degree prior to entry into the PharmD program can be admitted into the MS CTS program upon completion of their P2 year and can receive up to 12 credit hours towards their MS CTS for courses they completed prior to their admission to the program.

Students in the program must satisfy requirements of the Master of Science in Clinical and Translational Science (MS CTS), a 48 semester hour program, and satisfy 133 semester hours required for Doctor of Pharmacy (PharmD) program of study. Upon admission to the MS in CTS program, students will participate in a variety of seminars and workshops. They will be expected to continue to participate in these seminars and workshops until the completion of the joint program.

Requirements for the MS CTS portion of the joint degree are as follows:

School-Wide Core Requirements (26 SH)

Course	Title	Credits
BSTT 400	Biostatistics I	4 SH
EPID 403	Introduction to Epidemiology: Principles and Methods	3 SH
IPHS 520	Public Health Frameworks for Researchers	3 SH
IPHS 598	Research in the Public Health Sciences – MS*	16 SH

Required Non-Credit Training	
Information Privacy & Security (https://about.citiprogram.org/en/homepage) IPS Register for the University of Illinois, Chicago	Non-credit
Human Subjects Research (https://about.citiprogram.org/en/homepage) HSR Register for the University of Illinois, Chicago	Non-credit
Investigator Training 101	Non-credit
Academic Integrity Tutorial	Non-credit

Divisional Core Requirements (12 SH)

Course	Title	Credits
BHIS 509	Informatics for the Clinical Investigator	3 SH
BSTT 401	Biostatistics II	4 SH
HPA 522	Public Health Research Design and Methods	3 SH
HPA 526	Leadership and Diversity in Clinical Research	2 SH
HPA 590	Grant Writing	1 SH
GC 501	Scientific Integrity and Responsible Research	1 SH

Electives (6 SH)

All students must complete a minimum of 6 semester hours of electives selected from across disciplines at UIC. With input from their advisor and mentor, students will choose appropriate electives that are tailored to their unique backgrounds, skill levels, areas of interest, research focus, and future goals. At least 9 semester hours must be 500-level courses excluding thesis or independent study.

MS Thesis Research Requirements: Sixteen credits of mentored research (IPHS 598-Research) must be completed in two to three semesters of full time work leading to the completion of a publishable paper and a research proposal. The research must be completed under the supervision of an approved clinical investigator and with the approval of a mentorship committee designed specifically for each student.

Final Oral Examination: The final oral examination consists of a presentation of the student's research findings at an open meeting of students and faculty and a separate oral examination in the academic division by the student's Thesis Examining Committee. The presentation should be based on the publishable paper and research proposal products of the student's clinical research project.

Shared Courses

- With proper planning and prior approval of the MS Advisor and Director of Advanced Pharmacy Practice Experiences (APPE), joint degree students may take a non-clinical pharmacy elective during their P3 year and receive MS CTS elective credit (or take an advanced level public health course and receive PharmD elective credit).
- Shared elective coursework is limited to a maximum of 4 semester hours. Sample shared elective courses include:

  Sample Pharmacy Electives:
  - PHAR 455 Drug Information & Statistics (4)
  - PSOP 525 Medication, Identity and Illness (3)

  Sample Public Health Electives:
  - HPA 403 US Health Care System (3)
  - BSTT 506 Design of Clinical Trials (3)
  - HPA/PSOP 573 Principles of Economic Evaluations of Health Care Interventions (3)
- With proper advisement, PharmD/MS CTS students may apply a maximum of 4 semester hours of MS research (IPHS598) taken during the P3 year toward pharmacy electives (independent study-research elective).
- With proper advisement, PharmD/MS CTS students may apply a maximum of 4 semester hours of MS research hours (IPHS 598) taken during the P4 year toward P4 Clerkship Electives requirements.
- No more than 12 total hours will consist of shared coursework.

Advising joint degree program students: Students in the joint degree program will be assigned advisors from the COP's Office of Student Affairs and the MS CTS program. Advising will assure that a student is excelling in both programs and not sacrificing one for the benefit of the other.

Contact Information

School of Public Health
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MS/CTS DEGREE FOUNDATIONAL COMPETENCIES

The Master of Science (MS) in Clinical and Translational degree in Public Health Sciences degree is intended to train clinicians, primarily post-doctoral or post-residency fellows and junior faculty, to become leaders in clinical research.

The MS degree is awarded under the University of Illinois at Chicago Graduate College. For the purposes of this degree program, the School of Public Health acts as the Department of Public Health Sciences (DPHS) of the Graduate College. All requirements related to the degree, as described in the UIC Graduate Study Catalog, must be met.

MS students will achieve the following competencies during completion of the MS program in public health:

1. Explain public health history, philosophy and values
2. Identify the core functions of public health and the 10 Essential Services
3. Explain the role of quantitative and qualitative methods and sciences in describing and assessing a population's health
4. List major causes and trends of morbidity and mortality in the US or other community relevant to the school or program
5. Discuss the science of primary, secondary and tertiary prevention in population health, including health promotion, screening, etc.
6. Explain the critical importance of evidence in advancing public health knowledge
7. Explain effects of environmental factors on a population's health
8. Explain biological and genetic factors that affect a population's health
9. Explain behavioral and psychological factors that affect a population's health
10. Explain the social, political and economic determinants of health and how they contribute to population health and health inequities
11. Explain how globalization affects global burdens of disease
12. Explain an ecological perspective on the connections among human health, animal health and ecosystem health (e.g., One Health)

MS CTS COMPETENCIES

MS CTS students will achieve the following competencies upon completion of their studies:

1. Research Questions

- Identify basic and preclinical studies that are potential testable clinical research hypotheses.
- Identify research observations that could be the bases of large clinical trials.
- Define the data that formulate research hypotheses.
- Derive translational questions from clinical research data.
- Prepare the background and significance sections of a research proposal.
- Critique clinical and translational research questions using data-based literature searches.
- Extract information from the scientific literature that yields scientific insight for research innovation.

2. Literature Critique

- Conduct a comprehensive and systematic search of the literature using informatics techniques.
- Summarize evidence from the literature on a clinical problem.
- Describe the mechanism of a clinical problem reviewed in a manuscript.
- Use evidence as the basis of the critique and interpretation of results of published studies.
- Identify potential sources of bias and variations in published studies.
- Interpret published literature in a causal framework.
- Identify gaps in knowledge within a research problem.

3. Study Design

- Formulate a well-defined clinical or translational research question to be studied in human or animal models.
- Propose study designs for addressing a clinical or translational research question.
- Assess the strengths and weaknesses of possible study designs for a given clinical or translational research question.
- Design a research study protocol.
- Identify a target population for a clinical or translational research project.
- Identify measures to be applied to a clinical or translational research project.
- Design a research data analysis plan.
- Determine resources needed to implement a clinical or translational research plan.
- Prepare an application to an IRB.

4. Research Implementation

- Compare the feasibility, efficiency, and ability to derive unbiased inferences from different clinical and translational research study designs.
- Assess threats to internal validity in any planned or completed clinical or translational study, including selection bias, misclassification, and confounding.
- Incorporate regulatory precepts into the design of any clinical or translational study.
- Integrate elements of translational research into given study designs that could provide the bases for future research, such as the collection of biological specimens nested studies and the development of community-based interventions.

5. Sources Of Error

- Describe the concepts and implications of reliability and validity of study measurements.
- Evaluate the reliability and validity of measures.
- Assess threats to study validity (bias) including problems with sampling, recruitment, randomization, and comparability of study groups.
- Differentiate between the analytic problems that can be addressed with standard methods and those requiring input from biostatisticians and other scientific experts.
- Implement quality assurance systems with control procedures for data intake, management, and monitoring for different study designs.
- Assess data sources and data quality to answer specific clinical or translational research questions.
- Implement quality assurance and control procedures for different study designs and analysis.

6. Statistical Approaches

- Describe the role that biostatistics serves in biomedical and public health research.
- Describe the basic principles and practical importance of random variation, systematic error, sampling error, measurement error, hypothesis testing, type I and type II errors, and confidence limits.
- Scrutinize the assumptions behind different statistical methods and their corresponding limitations.
- Generate simple descriptive and inferential statistics that fit the study design chosen and answer research question.
- Compute sample size, power, and precision for comparisons of two independent samples with respect to continuous and binary outcomes.
- Describe the uses of meta-analytic methods.
- Defend the significance of data and safety monitoring plans.
- Collaborate with biostatisticians in the design, conduct, and analyses of clinical and translational research.
- Evaluate computer output containing the results of statistical procedures and graphics.
- Explain the uses, importance, and limitations of early stopping rules in clinical trials.

7. Biomedical Informatics

- Describe trends and best practices in informatics for the organization of biomedical and health information.
- Develop protocols utilizing management of information using computer technology.
- Describe the effects of technology on medical research, education, and patient care.
- Describe the essential functions of the electronic health record (EHR) and the barriers to its use.
- Explain the role that health information technology standards have on the interoperability of clinical systems, including health IT messaging.
- Access patient information using quality checks via electronic health record systems.
- Retrieve medical knowledge through literature searches using advanced electronic techniques.
- Discuss the role of bioinformatics in the study design and analyses of high dimensional data in areas, such as genotypic and phenotypic genomics.
- Collaborate with bioinformatics specialists in the design, development, and implementation of research projects.

8. Clinical Research Interactions

A. *Regulatory Support and Knowledge Competencies*

- Describe the fundamental principles of the protection of human subjects, the main authoritative bodies, key codes, and scope of enforcement.
- Describe the Food and Drug Administration requirements for drug biologic products
- Prepare an application for IRB approval.
- Critique a proposal for risks to human subjects and protections of vulnerable populations.
- Describe the essential elements of voluntary informed consent.
- Describe the principles of research documentation, validation and audit.

B. Responsible Conduct of Research Competencies

- Explain the ways in which the principles of research ethics are integrated into the design, conduct, oversight and dissemination of research.
- Describe the authority for and professional standards for the responsible conduct o research.
- Explain the procedures for reporting and investigating misconduct in research.
- Explain conflict of interest management in research.
- Outline criteria for determination of authorship.
- Describe the role of peer review in funding and publication.
- Explain the purpose, policies and procedures to ensure ethical use, care, and animal safety in research.

9. Scientific Communication

- Communicate clinical and translational research findings to different groups of individuals, including colleagues, students, the lay public, and the media.
- Translate the implications of clinical and translational research findings for clinical practice, advocacy, and governmental groups.
- Write summaries of scientific information for use in the development of clinical health care policy.
- Translate clinical and translational research findings into national health strategies or guidelines for use by the general public.
- Explain the utility and mechanism of commercialization for clinical and translational research findings, the patent process, and technology transfer.

10. Cultural Diversity

- Differentiate between cultural competency and cultural sensitivity principles.
- Recognize the demographic, geographic, and ethnographic features within communities and populations when designing a clinical study.
- Describe the relevance of cultural and population diversity in clinical research design.
- Describe cultural and social variation in standards of research integrity.
- Critique studies for evidence of health disparities, such as disproportional health effects on select populations (e.g., gender, age, ethnicity, and race.)

11. Translational Teamwork

- Build an interdisciplinary/ intra-disciplinary/ multidisciplinary team that matches the objectives of the research problem.
- Manage an interdisciplinary team of scientists.
- Advocate for multiple points of view.
- Clarify language differences across disciplines.

- Demonstrate group decision-making techniques.
- Manage conflict.
- Manage a clinical and/or translational research study.

12. Leadership

- Work as a leader of a multidisciplinary research team.
- Manage a multidisciplinary team across its fiscal, personnel, regulatory compliance and problem solving requirements.
- Maintain skills as mentor and mentee.
- Validate others as a mentor.
- Foster innovation and creativity.

13. Cross Disciplinary Training

- Apply principles of adult learning and competency-based instruction to educational activities.
- Provide clinical and translational science instruction to beginning scientists.
- Incorporate adult learning principles and mentoring strategies into interactions with beginning scientists and scholars in order to engage them in clinical and translational research.
- Develop strategies for overcoming the unique curricular challenges associated with merging scholars from diverse backgrounds.

14. Community Engagement

- Examine the characteristics that bind people together as a community, including social ties, common perspectives or interests, and geography.
- Appraise the role of community engagement as a strategy for identifying community health issues, translating health research to communities and reducing health disparities.
- Summarize the principles and practices of the spectrum of community-engaged research.
- Analyze the ethical complexities of conducting community-engaged research.
- Specify how cultural and linguistic competence and health literacy have an impact on the conduct of community engaged