

**UNIVERSITY AT BUFFALO**

**DEPARTMENT OF EPIDEMIOLOGY AND  
ENVIRONMENTAL HEALTH**

**GRADUATE STUDENT  
HANDBOOK**

**2018-2019**



**University at Buffalo**  
*The State University of New York*

Department website: <http://sphhp.buffalo.edu/eeh>

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Students: This is your handbook; please read it and use it. It is interactive. Click on any title in the Table of Contents to be taken directly to the corresponding section in the document. Please refer to it often as you progress through your academic career. Feel free to contact me if you have any questions at [krklie@buffalo.edu](mailto:krklie@buffalo.edu) or 716-829-5364.

Academically yours,

*Karen DeGarmo*

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# INTRODUCTION

This handbook is a guide for students in the Department of Epidemiology and Environmental Health (EEH). These guidelines are meant to highlight important Departmental and University procedures and policies. Note: Department policies take precedence over Graduate School policies. Please use this document, it contains a great deal of important information. If you have questions about any of the procedures or the regulations, contact your advisor or the Graduate Program Coordinator for assistance.

**All students are responsible for knowing the rules and procedures described in this EEH *Graduate Student Handbook* and also in the University's *Graduate School Policy Library Manual* (<https://grad.buffalo.edu/succeed/current-students/policy-library.academics.html>)**

**It is the student's responsibility to ensure that all requirements are met and all necessary paperwork has been completed and filed in a timely manner.** Generally, the procedures, policies and course requirements in effect at the time of matriculation will apply throughout a student's degree program. However, the department reserves the right to amend its regulations and procedures when necessary and grant students the right to petition regarding the amendments in individual cases. Students will be notified if and when regulations and procedures are changed.

**All students should activate and check frequently their university email for university-related correspondence. Students are responsible for all information distributed via email.** Important notices are routinely posted through the Department's email listserv.

Students are assigned mailboxes located in room 265 Farber Hall. Items of general interest are also posted on the bulletin board outside room 265.

Checklist:

- ✓ **STUDENTS ARE RESPONSIBLE FOR ALL INFORMATION DISTRIBUTED VIA EMAIL, CONTAINED IN THE GRADUATE SCHOOL POLICY AND PROCEDURES MANUAL, AND EEH GRADUATE STUDENT HANDBOOK.**
- ✓ **Check your UB email daily and notify the Department if there is a change in your email address.**
- ✓ Check your student mailbox (room 265) regularly.
- ✓ Notify both the Department and the Student Response Center ([www.registrar.buffalo.edu](http://www.registrar.buffalo.edu)) when there is a change in your home address and/or telephone number.
- ✓ Notify the Department when there is a change in your work address and/or telephone number.
- ✓ International students should report their social security number to the Department as soon as a number is assigned by the Social Security Administration.

## HISTORY & BACKGROUND OF THE DEPARTMENT

Epidemiology and public health have a long and rich history at the University at Buffalo (UB) and in western New York. As far back as 1843, one of the founding faculty members of the University, Austin Flint, did epidemiologic research, publishing a description of an outbreak of fever in the Western New York region. The first mention of a formal course in public health in the UB medical school catalog was in 1891, a course focusing on infectious disease prevention, hygiene and sanitation. In 1913, a division of the medical school was formed, Hygiene and Sanitation, and in 1919, the department was first established, then called the Department of Hygiene and Public Health. In 1946, that name was changed to the Department of Preventive Medicine and Public Health and in 1967 to the Department of Social and Preventive Medicine (SPM). In April 2014, the department's name was changed to Epidemiology and Environmental Health (EEH). This new name better reflects the department's current focus in terms of the teaching and research programs in epidemiology, environmental health and health services administration.

Until 2003, EEH was part of the School of Medicine and Biomedical Sciences (SMBS). During that time, the focus of the department was on teaching and research in epidemiology but also included faculty with research focused in other areas of public health. In 1997 a partnership was formed with the State University of New York at Albany making it possible for students to obtain a Master of Public Health Degree (MPH) from Albany with coursework at UB. In 2001, an MPH degree program was created at UB in the Department of EEH offering two concentrations, epidemiology/biostatistics and health services administration.

In 2003, EEH became part of a newly formed School of Public Health and Health Professions (SPHHP), joining with School of Health Professions' colleagues in Exercise and Nutritional Sciences, and Rehabilitation Sciences and with colleagues in new departments of Biostatistics, and Community Health and Health Behavior. In 2009, SPHHP was accredited as a School of Public Health by the Council on Education for Public Health (CEPH), and was reaccredited in the summer of 2015.

In addition to the graduate programs housed in EEH, our department and faculty are involved in the undergraduate minor and bachelor of science (BS) in public health, as well as in programs combining the BS in public health with master's degree programs in our department. More information on the undergraduate programs can be found on the school's website: <http://sphhp.buffalo.edu/home/education/undergraduate-advisement.html>.

Within EEH we have a Division of Environmental Health Sciences (established in 2010), and a Division of Health Services Policy and Practice (established in 2014). The current graduate programs offered by EEH cover a number of disciplines and include an MS and PhD in Epidemiology and MPH degrees. The MS degree includes a specialized track in Clinical Research. Our PhD program also includes a National Institutes of Health (NIH) funded, multidisciplinary training program in cancer epidemiology in collaboration with Roswell Park Comprehensive Cancer Center. Three of the five MPH concentrations offered at UB are housed in EEH: epidemiology (EPI), environmental health (EH) and health services administration (HSA). In addition to these two-year MPH programs, we also offer one-year, accelerated MPH programs in EPI, EH, and HSA.



## MISSION OF THE DEPARTMENT

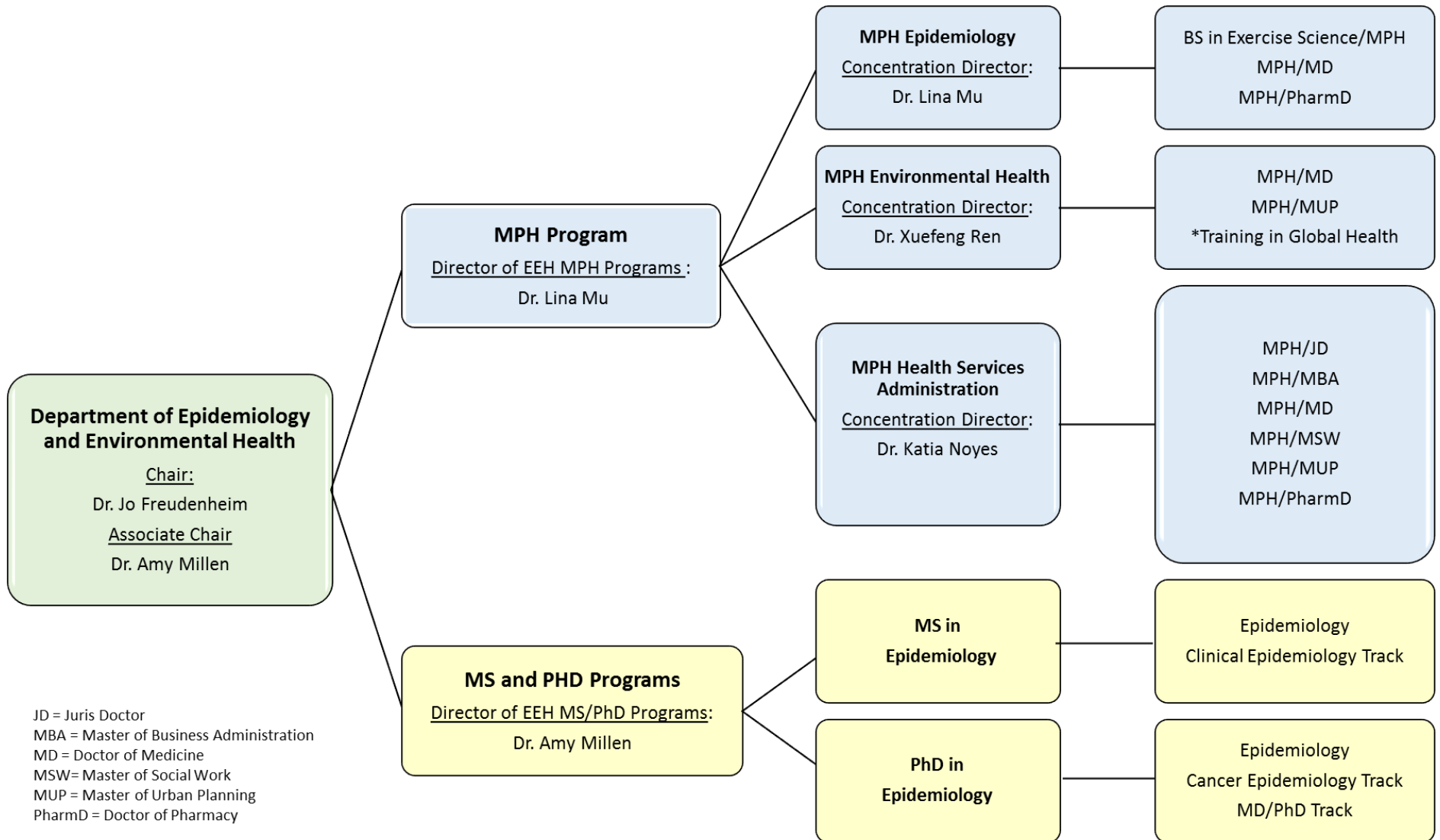
The Mission of the department is three-fold:

1. Conduct research in epidemiology, environmental health, health services administration and preventive medicine that will contribute to improvements in population health status in our community, our nation and the world.
2. Educate and develop scientists and practitioners for careers in epidemiology, environmental health, health services administration, preventive medicine, clinical research and public health. Utilize the expertise of the department for training in other departments in the School of Public Health and Health Professions (SPHHP) and in the University at Buffalo (UB).
3. Serve the public health needs of our communities by applying our resources and expertise to implement best practices in public health education, disease prevention and health promotion.

Training in epidemiology is offered at the PhD, MS and MPH levels and includes the study of epidemiologic research methods, biostatistics, and survey methods. Training also focuses on understanding the biological, behavioral, social, and organizational determinants of disease and outcomes. Epidemiologists work in a variety of settings such as academic and government research, public health agencies at the local, state, national, or international level, health care delivery systems such as hospitals and managed care organizations, private research firms, and industry. Students can focus their epidemiologic research for the MS or the PhD degree on environmental health or on health services administration as well as other disease and exposure focus areas.

In addition to epidemiology, the Department provides graduate training (MPH) in environmental health and health services administration. Training in environmental health focuses on an understanding of the sources and physiologic effects of physical, chemical, and biologic agents that affect the environment, such as air pollution, water pollution and food toxicology. The Environmental Health MPH program prepares students to work in public health in governmental agencies, academic settings, and non-profits focused on the environment and health. The Health Services Administration concentration prepares students in program planning and health policy who wish to focus on careers in health policy development or administration and evaluation of health programs in government, health agencies, as well as a variety of other settings such as non-profit health agencies, public health advocacy organizations, hospitals, or health maintenance organizations. (An undergraduate program in public health is also offered by the SPHHP; EEH contributes to that program as well.)

# DEPARTMENT PROGRAM STRUCTURE



## ADVISEMENT

All students are assigned an academic advisor before their first semester to assist in planning their course schedules, and to provide guidance for meeting specific educational goals and long-term career goals. The academic advisor will assist the student until all course work is completed or until the student identifies a major professor to chair their PhD dissertation committee, MS thesis committee, or MPH integrative project. All administrative questions should be directed to the Graduate Program Coordinator.

Students are expected to consult with their advisor prior to registration each semester. Failure to do so could result in a student not fulfilling the requirements in a timely manner for their anticipated degree conferral. Students should schedule regular appointments with their advisor, taking into consideration faculty's availability and university deadlines. Students are required to complete a yearly progress report. First-year students do an additional progress report after completing their first semester.

If, for any reason, a student wishes to change advisors, they must obtain permission from the selected faculty and submit a request in writing to the MS/PhD or MPH Graduate Director (a copy must also be sent to the selected faculty advisor). Changes will be made only with the approval of the new advisor. The department will try to accommodate all student requests.

# PROGRAM REGULATIONS

## REGISTRATION

The registration timetable, course offerings and class schedules are posted on the Student Response Center's (SRC) web site ([www.registrar.buffalo.edu](http://www.registrar.buffalo.edu)).

All students are required to consult their advisor prior to registration, and to register for a minimum of 1 credit hour each Fall and Spring semester until degree conferral according to the procedures and within the deadlines established by the Student Response Center. This continuous registration requirement includes semesters in which formal courses are taken, as well as semesters in which a student is working on their thesis/dissertation/project. Summer registration is not required unless a student has been on an official Leave of Absence in the Spring semester and intends to have their degree conferred on September 1. No credit will be allowed for work done without proper registration. It is important that students verify their registration each semester before the Add/Drop deadline. Courses dropped after the deadline will be assessed a tuition penalty.

Students who do not maintain continuous registration (without explicit approval for a leave of absence) are considered to have left the University and will be dropped from the program (see section on Leave of Absence and Re-Entry to the Program).

### **Registration Deadlines**

Continuing students may take advantage of early registration by registering in November for the Spring semester and April for the Fall semester. Registration is continuous through the last day of Add/Drop. In order to avoid a late registration penalty, continuing students must register before the University's first billing in the third week of July (for Fall) and early December (for Spring). Check the SRC website for dates.

#### Registration Checklist:

- ✓ Verify registration before the Add/Drop deadline each semester

### **Auditing Courses**

A student wishing to audit a course must officially register and pay tuition for the course. A tuition scholarship does not cover courses taken for audit. The student must also submit a written request to the instructor by the fourth week of class requesting an 'Audit' grade. The instructor's decision will be final and will be transmitted to the student in writing. A copy of the approval must also be forwarded to the department for the student's file. A student may re-register for the course at a later date and receive a grade and academic credit for work completed in the re-registered course.

### **Course Resignations**

All course resignations processed *within the official deadlines* will be indicated as officially resigned by the notation 'R' on grade reports, transcripts, and other official University documents. There are no quality points attached to an 'R' designation. Resignation from all courses should be done by filing a Request for Exception Registration. This form can be obtained from the Graduate Program Coordinator.

#### Course Resignation Checklist:

- ✓ Complete the **Request for Exception Registration**
- ✓ Obtain signature of course instructor(s) indicating approval of the resignation(s)
- ✓ Forward to the Graduate Program Coordinator (do not send directly to the Graduate School)

### **Requirements for Full-Time Status**

Students must be registered for a minimum of 12 credit hours each Fall and Spring semester (or a minimum of 9 credit hours per semester if appointed as a graduate, teaching or research assistant) to be considered full-time.

- Full-time registration is a necessary condition of appointment for an assistantship and/or tuition scholarship.
- International students must maintain full-time registration as a condition for their student visa.

### **Certification of Full-Time Status**

Students who are required to maintain full-time status for the purpose of tuition assistantship/scholarship, loan deferral or immigrant status may be certified as full-time when registered for less than 12 graduate credit hours (or 9 credit hours if appointed as a graduate, teaching or research assistant) ONLY if the following conditions have been met:

- ✓ All coursework has been completed
- ✓ A student has maintained full-time status since matriculation in the program
- ✓ Student registers for a minimum of one credit hour per semester
- ✓ A student is engaged in full-time research on their thesis/dissertation/project
- ✓ **Application to Candidacy Form** (ATC) has been completed, signed by all committee members and the MS/PhD or MPH Graduate Director.

Certification must be requested using the **Certification of Full-Time Status** form:

<http://grad.buffalo.edu/forms/full-time-status.html>

Students must be registered for the semester in which they are filing. A PHOTOCOPY of the ATC signed by the student and all committee members should be attached to the **Certification of Full-Time Status Form** and forwarded to the Graduate Program Coordinator. Do not submit the original ATC. The student should retain the original ATC to present at their proposal defense. (See section on Application to Candidacy.) It is NOT required that the proposal be defended when applying for full-time status. Attachments to the ATC are also not required at this time.

PhD students are required to file only once for full-time status during their studies provided they register for the same number of credit hours each semester for which they obtained approval. If the number of credit hours changes, or if the date of degree conferral changes, the student must file a new **Certification of Full-Time Status Form** to receive continued certification. MS/MPH students can only be approved for a maximum of two semesters. If additional time is needed, the student must submit a new form along with a written request and progress update from their advisor/major professor.

#### Certification of Full-time Status Checklist:

- ✓ Complete the **Certification of Full-Time Status Form**
- ✓ Obtain signature of advisor/major professor
- ✓ Attach a COPY of the ATC form signed by all committee members
- ✓ Forward to the Graduate Program Coordinator (do not send directly to the Graduate School)

### **Continuous Registration**

Both full-time and part-time students must register each Fall and Spring semester for a minimum of one credit hour until all degree requirements are met (including the final defense of the thesis/dissertation/project). A zero credit course does not fulfill the requirement for continuous registration. If a student is not on an approved leave of absence and fails to register for a semester, they are considered to have left the University and must reapply to the program in order to re-enter. A **\$350 student reactivation fee** will be required to be paid by the student, prior to course registration, in order to activate their student record and remove the Service Indicator. Re-applications must include a detailed timeline for completion of the degree. The Department reserves the right to accept or deny readmission, and to determine what prior course work can be applied to the degree. Re-admitted students are subject to all policies in effect at the time of re-application.

- Students must register for a minimum of one credit hour in the semester following an approved leave of absence and in the semester of degree conferral. (Note: registration is not required in the Spring semester for a February 1 degree conferral and is not required in the Summer session for a September 1 degree conferral.)
- Students must be registered in the semester they defend their thesis/dissertation or present their integrative project. They may not be on a leave of absence in the semester during which the degree is conferred.

**NOTE:** No credit will be allowed for work done without proper registration.

## **LEAVE OF ABSENCE**

Requests for a leave of absence must be negotiated through the MS/PhD or MPH Graduate Director using the **Leave of Absence** form <http://www.registrar.buffalo.edu/pdfs/gradleaveofAbsence.pdf>. After review and approval from the MS/PhD or MPH Graduate Director, the form should be given to the Graduate Program Coordinator to forward to the Graduate School at least two weeks prior to the start of the semester in which the leave is to begin. Typically, a leave of absence is approved for a maximum of one year, but may be extended for up to one additional year if circumstances warrant.

- The Graduate School will not approve a leave of absence for 'personal reasons,' you must be specific and present strong justification for your request.
- The Graduate School will not approve a leave of absence if a student is not in good academic standing.
- Students may not petition for a leave of absence after the leave has occurred.

NOTE: If a student is not on an approved leave of absence and fails to register for a semester, they are considered to have left the University and must reapply to the program in order to re-enter. Re-entering students are subject to all policies in effect at the time of re-application. A **\$350 student reactivation fee** will be required to be paid by the student, prior to course registration, in order to activate their student record and remove the Service Indicator. Re-applications must also include a detailed timeline for completion of the degree. The Department reserves the right to accept or deny re-admission, and to determine what prior course work can be applied to the degree.

### Leave of Absence Checklist:

- ✓ Complete **Leave of Absence** form after approval to complete form is given by the program specific Graduate Director. Form should include student and major advisor signatures.
- ✓ Forward form to the Graduate Program Coordinator (do not send directly to the Graduate School) at least two weeks prior to the start of the semester.

**Re-Entry in the Program after a Leave of Absence.** When a student returns from an approved leave of absence, they must notify the Department in writing of their intention to be reinstated in the academic program. This request should be made a minimum of two weeks before the start of the semester. The Graduate School will automatically create a new student record allowing the student to register for courses.

### Re-entry Checklist:

- ✓ Request in writing to have status reinstated by the Department.

## **GRADUATE COURSE CREDIT**

### ***Graduate Course Credit***

Graduate course credit is granted only for 500, 600, 700, 800 and 900 level courses provided proper registration requirements are met.

### ***Undergraduate Courses for Graduate Credit***

Undergraduate courses for graduate credit require prior petition and approval by the Dean of the Graduate School. Undergraduate courses may be taken by graduate students as appropriate prerequisites to their chosen field of study but may not be used to satisfy graduate program requirements or carry graduate credits. Exceptions may be made for some 400 level courses. A ***Petition for Class Registration Outside Your Primary Academic Career*** (<http://registrar.buffalo.edu/pdfs/OutsideofCareerPetition.pdf>) must be filed at the time of registration and before the end of the Add/Drop deadline. A maximum of two undergraduate courses at the 400 level may be taken for graduate credit. All 400 level undergraduate courses that carry four or more credit hours will receive a maximum of three credit hours of graduate credit.

#### ***Undergraduate Courses for Graduate Credit Checklist:***

- ✓ Complete ***Petition for Class Registration Outside Your Primary Career***
- ✓ Be sure to sign form
- ✓ Provide justification for request
- ✓ Obtain signature of course instructor
- ✓ Include description of extra work required provided by the course instructor
- ✓ Forward to the Graduate Program Coordinator (do not send directly to the Graduate School)

## **TRANSFER CREDIT**

Each graduate program determines the applicability of previous graduate courses proposed for transfer credit. Only those graduate courses completed at an accredited or recognized institution of higher education with a minimum grade of 'B' (3.0) are eligible for consideration for transfer credit. Courses with 'S' or 'P' grades are not transferable unless the transcript specifically states they are equivalent to a 'B' or higher grade.

International transcripts with numerical grades or grades of 'excellent' or 'good' must also include an official grading scale documenting that the grade is equivalent to a B or higher grade. This documentation should be obtained from the university where the courses were taken. Transcripts must also include the number of credit hours earned for each course. Credits earned in correspondence or undergraduate courses may not be transferred.

Requests for transfer credit should be made at the first opportunity after admission to the program and within the first year of study. Students requesting approval for transfer credit must complete a ***Transfer Credits Petition*** (<http://grad.buffalo.edu/content/dam/grad/study/pet-transfer.pdf>) and provide a justification of how the course(s) relate to the student's program and training. A copy of the course syllabus and a brief description of each course must also be provided to the Graduate Program Director.

A maximum of 6 credit hours of graduate work may be transferred for the MS, a maximum of 9 credit hours may be transferred for the MPH, and a maximum of 36 credit hours acquired in a relevant master's degree program may be transferred to the PhD. Thesis and dissertation guidance and research credits are not transferable. The University's 10-year time limit for each course will be considered for each course request (see section on Time Limit for Prior Coursework).

Transfer Credit Checklist:

- ✓ Complete **Transfer Credits Petition**
- ✓ Be sure to sign form
- ✓ Provide a brief rationale of applicability for each course
- ✓ Provide course outline(s) and description(s)
- ✓ If the request is made for courses taken at an international university, include an English translation with letter grades and credit hours, and a grading scale if no letter grades are available

**Policy on Transfer of Credit for Required Courses**

Students requesting transfer credit for required courses taken outside the University (e.g., EEH 501, EEH 502, STA 527) must discuss with and receive approval from the Graduate Director to have these course credits transferred.

**Time Limit for Prior Coursework**

All coursework (whether transfer or UB credits) taken more than 10 years ago must be approved by the MS/PhD or MPH Graduate Director and petitioned to and approved by the Graduate School at the time of admission to the program in order to apply to completion of a degree. If these credits are included in an approved extension of time limit petition, they are valid only until the expiration date of that petition. Any further extension of the approved time limit for degree completion will require, concurrently, a re-petition for approval of these older courses. Requests for approval of courses more than 10 years old must be petitioned through the Graduate School by completing the **Use of Historical Coursework (more than 10 years old)** form (<http://grad.buffalo.edu/forms/historical.html>). Appropriate justification of how the course(s) relate to the student's program and how the student has kept current with the subject matter of each course must be provided.

Prior Coursework Checklist:

- ✓ Complete **Use of Prior Coursework**
- ✓ Be sure to sign form
- ✓ Attach original official transcript for courses not completed at UB
- ✓ Attach letter explaining how you have kept current the knowledge gained from the course(s)
- ✓ Attach up-to-date CV or resume
- ✓ Obtain signature of advisor/major professor
- ✓ Forward to the Graduate Program Coordinator (do not send directly to the Graduate School)



## **INFORMAL COURSES**

### ***Graduate School Definition***

Informal courses include registration in independent study, project, thesis, or dissertation guidance, directed or supervised reading, and directed research. Informal courses associated with final project, portfolio, thesis, research, or dissertation completion do not require the establishment of formal agreements. For independent studies and for directed research, an agreement should be completed and approved.

Use of undergraduate courses below the 400 level, as the criteria for creating an informal graduate course, is strictly prohibited.

Informal courses of Independent Study (EEH 597 or EEH 697) and Directed Research (EEH 698) are offered in EEH.

### ***Independent Study (EEH 597, EEH 697)***

Independent Study (IS), a type of informal coursework, is intended for PhD students with special interests not satisfied through the formal course work; it is pursued under the direction of a faculty member. This course is available as an elective when appropriate to the student's educational goals. Students must receive approval from both their supervising faculty and the MS/PhD or MPH Graduate Director. Although IS is intended for PhD students (EEH 697), MS or MPH students can petition to take IS in EEH 597 if the need is relevant to their future career plans and they obtain permission of the course instructor and the MS/PhD or MPH Graduate Director.

Students must provide their supervising faculty with a copy of the ***Description of Informal Course Work Form*** found at:

<http://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/independent-study-form.pdf>.

This form is signed by both the student and supervising faculty and forwarded to the MS/PhD or MPH Graduate Director for approval a *minimum of two weeks prior to the drop/add deadline*. When approved, the student will be force registered into the course by the Department. A copy of the approved agreement form is returned to the student.

- Doctoral students are limited to 9 *credit hours total* of IS (EEH 697).
- Master's students are limited to 6 *credit hours total* of IS (EEH 597).
- Students can register for a maximum of 6 IS credits per semester.

It is the responsibility of the student and the instructor to see that all IS agreements are maintained in the student's file in EEH. IS agreements become part of the student's permanent academic record. It is recommended that the student register with their major advisor and/or committee members for IS.

**A letter grade is given for IS.**

### ***Directed Research (EEH 698)***

The purpose of Directed Research (DR), a type of informal coursework, is to engage PhD students in ***research*** under the mentorship of a faculty member. This course is available as an elective when appropriate to the student's educational goals. Students must receive approval from both their supervising faculty and the MS/PhD Graduate Director. Students must provide their supervising faculty with a copy of the ***Description of Informal Course Work Form*** found at:

<http://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/directed-research-form.pdf>

The form is signed by both student and supervising faculty and forwarded to the MS/PhD Graduate Director for approval a minimum of two weeks prior to the drop/add deadline. When approved, the student will be force registered into the course by the Department. A copy of the approved agreement form is returned to the student.

- Doctoral students are limited to 15 *credit hours total* of DR.
- Master's students *cannot register* for DR.
- Students can only register for a maximum of 6 DR credits per semester.

It is the responsibility of the student and the instructor to see that all DR agreements are maintained in the student's file in EEH. DR agreements become part of the student's permanent academic record. It is recommended that the student register with their major advisor and/or committee members for DR.

**An S/U grade is given for DR.**

## STUDENT GENERAL PROGRESS REPORTS

All students are required to schedule a meeting with their advisor at the end of each academic year (during the month of May) to review their academic progress and complete their Student General Progress Report. This review is designed to develop the program for each student, to discuss their coursework and plans for upcoming registration, and to advise a student of any deficiency in their progress toward degree conferral. All first-year students also have their academic progress evaluated after their first semester of enrollment in the program. Students prepare their progress reports prior to meetings with the advisors for their review and signature. Students who fail to meet with their advisor to complete their General Program Report will have a check stop issued and will not be able to register for the following semester.

## ACADEMIC PROGRESS

Students must maintain at minimum an overall B average (3.0) and achieve a grade of B or better in each **required** course. **NOTE:** B- (2.67) is below the minimum grade for required courses.

### CLARIFICATION NOTE:

- The department of EEH defines a required course as one specifically listed in the handbook under a heading of “required”.
- Students do not have to obtain a grade of B in other courses necessary for degree completion (see curriculum sections for each degree); however, it is expected by the department that they do so. Please note that not obtaining B grades in all coursework may put a student at risk for not having an overall cumulative GPA of 3.0, and may impact any funding or assistantship.

### ***Academic Probation***

If a student is placed on academic probation they will be notified via a letter from the program specific Graduate Director. Students may continue to take courses, including required courses, but only with permission of the instructor.

The following would qualify a student to be put on academic probation:

- **Scenario #1.** A student who achieves a grade of B- or lower in **one or more** required courses.
  - If a student receives a grade of B- or lower in a course(s) specifically listed in the handbook under a heading of “required” they will be put on academic probation.
  - The student must retake the required course(s) within one year and achieve a grade of B (3.0) or higher. Assuming that they do not qualify for academic probation for other reasons, they would then no longer be on academic probation.
- **Scenario #2.** A student who receives a grade of U, D or F in any course.
  - If the course is a required course, the steps in academic probation scenario #1 must be followed.
  - If the course is not a required course the student has one year to address their academic probation as outlined by the departmental faculty with agreement from the program specific Graduate Director for the student’s degree program.
- **Scenario #3.** A student whose cumulative GPA falls below 3.0.
  - The student is given one year to bring their cumulative GPA to 3.0 or above.
- **Scenario #4.** A student making unsatisfactory academic progress, as determined by the departmental faculty and the program specific Graduate Director.
  - The student must address deficiencies outlined by the departmental faculty (with agreement from the program specific Graduate Director for the student’s degree program) in order to be removed from academic probation.
  - The student has one year to address the noted deficiencies in order to be removed from academic probation.

### ***Academic Dismissal***

The following would qualify a student for academic dismissal:

- **Scenario #1.** A student receives three grades lower than B- in **any courses** (either required or not), including courses which have been repeated.
- **Scenario #2.** A student has two consecutive semesters with lower than an overall B average (3.0).
- **Scenario #3.** A student is put on academic probation and fails to achieve a B or higher grade in the required class(es) that need to be repeated or does not achieve an overall GPA of 3.0 or greater at the end of their probation period.
- **Scenario #4.** A student is put on academic probation and does not adequately address the outlined deficiencies as noted by the departmental faculty and the program specific Graduate Director of their degree program by the end of their probation period.

### ***Repeating Required Courses***

- Students who retake a course must officially register for it. Students are allowed only one opportunity to retake a course.
- Students are responsible for the tuition for repeated courses even if they are currently receiving a tuition scholarship.
- The grade and semester from the repeated course will be reported on the ***Application to Candidacy Form*** and will be used to certify that a student has met the minimum B grade requirement.
- The initial grade will remain on the student's transcript and all courses registered for (including repeated courses) will be used in calculating the student's GPA.

## **ACADEMIC INTEGRITY**

Students are required to read and be familiar with the Graduate School's Policy Library found at <http://grad.buffalo.edu/succeed/current-students/policy-library.html>.

Academic integrity is a fundamental university value. Through the honest completion of academic work, students sustain the integrity of the university while facilitating the university's imperative for the transmission of knowledge and culture based upon the generation of new and innovative ideas.

When an instance of suspected or alleged academic dishonesty by a student arises, it shall be resolved according to the University at Buffalo procedures described at the link above. These procedures assume that many questions of academic dishonesty will be resolved through consultation between the student and the instructor (a process known as consultative resolution, as explained below).

It is recommended that the instructor and student each consult with the department chair, school dean, or the Office of the Senior Vice Provost for Academic Affairs if there are any questions regarding these procedures.

### *Examples of Academic Dishonesty*

Academic dishonesty includes, but is not limited to, the following:

- **Previously submitted work.** Submitting academically required material that has been previously submitted in whole or in substantial part in another course, without prior and expressed consent of the instructor.
- **Plagiarism.** Copying or receiving material from any source and submitting that material as one's own, without acknowledging and citing the particular debts to the source (quotations, paraphrases, basic ideas), or in any other manner representing the work of another as one's own.
- **Cheating.** Soliciting and/or receiving information from, or providing information to, another student or any other unauthorized source (including electronic sources such as cellular phones or other devices), with the intent to deceive while completing an examination or individual assignment.
- **Falsification of academic materials.** Fabricating materials, notes, reports, or any forms of computer data; forging an instructor's name or initials; resubmitting an examination or assignment for reevaluation which has been altered without the instructor's authorization; or submitting a report, paper, materials, computer data, or examination (or any considerable part thereof) prepared by any person other than the student responsible for the assignment.
- **Misrepresentation of documents.** Forgery, alteration, or misuse of any University or Official document, record, or instrument of identification.
- **Confidential academic materials.** Procurement, distribution or acceptance of examinations or laboratory results without prior and expressed consent of the instructor.
- **Selling academic assignments.** No person shall sell or offer for sale to any person enrolled at the University at Buffalo any academic assignment, or any inappropriate assistance in the preparation, research, or writing of any assignment, which the seller knows, or has reason to believe, is intended for submission in fulfillment of any course or academic program requirement.
- **Purchasing academic assignments.** No person shall purchase an academic assignment intended for submission in fulfillment of any course or academic program requirement.

Additional information on plagiarism can be found at:

**Institute for Writing and Rhetoric (Dartmouth University)**

<http://writing-speech.dartmouth.edu/learning/materials/sources-and-citations-dartmouth>

## **GRADES**

All students are responsible for verifying their grade reports each semester and reporting any discrepancy to their course instructor.

### **Grade Options**

**S/U (Satisfactory/Unsatisfactory):** students electing to receive an 'S/U' grade must inform the instructor in writing by the fourth week of the semester, or the letter grade system will prevail. If the instructor approves the request, a copy of the approval must be sent to the Department for the student's file. An 'S' grade will be awarded only in those instances where a student's letter grade would be 'C' or better.

**S:** Not allowed for required courses. 'S' grades are assigned for directed research, thesis/dissertation guidance, MPH field training, and MPH integrative project.

**N:** Denotes an **audit** grade.

**R:** Indicates the student officially **resigned** from the course within the official University deadline. There are no quality points attached to an 'R' designation.

**L:** May be assigned for thesis/dissertation guidance or integrative project where **continuing work** is to be indicated instead of a final grade. 'L' grades automatically convert to 'S' grades upon degree conferral.

**J:** Denotes an **invalid grade** (i.e., no grade submitted). Students should immediately contact the instructor to validate their grade or the 'J' will default to an 'F' grade. Students will not be approved for degree conferral with outstanding 'J' grades on their transcript.

### **Incomplete Grades (I)**

- May be assigned only when the student has been unable to complete all the assigned projects and/or examinations in a course due to illness or other unforeseeable and compelling circumstance. Such circumstance must be communicated to the instructor as soon as known, but no later than the last day of class of the semester during which the course is taken.
- Cannot be assigned when a student has not attended the class.
- Is not an option for students who have not satisfactorily completed other academic requirements of the course.
- Cannot be assigned for thesis/dissertation guidance/integrative project.

If an 'I' is assigned, a letter grade must be assigned within two semesters (May 31 of the following year for the Spring semester, August 31 of the following year for the summer semester, and December 31 of the following year for the Fall semester.) If the course requirements are not completed by the deadline, the 'Incomplete' will automatically default to an 'Unsatisfactory' 'U' grade.

Individual instructors may set their own conditions for removing 'I' grades providing the time limit is not longer than specified by the University. Each instructor must clearly state such policy if it differs from that of the University. If there is a valid reason for waiving the deadline for removing an 'Incomplete' grade, the student may petition the Graduate School prior to the deadline using the ***Extension of I/U Completion Deadline*** (<http://www.registrar.buffalo.edu/pdfs/PetitionToExtndIUGrdDeadline.pdf>).

#### ***Incomplete Grade Checklist:***

- ✓ Be sure to verify the change of grade has been made on your transcript.

## **UNIVERSITY AFFIRMATIVE ACTION PLAN**

The University at Buffalo is committed to ensuring access to its programs and activities. The entire notice of non-discrimination can be viewed at:

<http://www.buffalo.edu/equity/data--reports-and-information/affirmative-action-plan.html>.

## **ABSTRACT SUBMISSION TO PROFESSIONAL MEETINGS**

Students intending to submit abstracts to professional meetings must obtain written approval from their advisor PRIOR to submission. All abstracts must include a full citation of authorship.

## **COMMENCEMENT**

In order to participate in the commencement ceremony, students must have completed ALL degree requirements and submitted all necessary paperwork by the required date. Students who do not complete within the time limits will be eligible to participate in commencement the following year, once they have completed the requirements (i.e., September and February degree conferral students walk in the following June commencement ceremony).

# GRADUATE STUDENT ASSISTANTSHIPS AND AWARDS

## TYPES OF ASSISTANTSHIPS

Assistantships, which provide a stipend and may include a full or partial tuition scholarship for the PhD program, complement learning experiences by providing the opportunity to apply the skills and knowledge students have gained.

All eligible students are considered for assistantships at the time of admission by the Admissions Committee. Appointments are for one year with the possibility of renewal for additional years.

### ***Graduate Assistantships***

A limited number of graduate assistantships are available for full-time PhD students. The assistantships are competitive and awarded on the basis of merit. They provide:

- A full tuition scholarship
- A \$20,000 stipend for the year of funding
- Health insurance/benefits (access to UB graduate student health insurance, paid by student)

Graduate assistants are expected to work 20 hours per week.

### ***Research Assistantships***

Faculty in the Department of Epidemiology and Environmental Health and at Roswell Park Comprehensive Cancer Center support students who work with them on their funded research projects. Responsibilities vary depending on the project.

Research assistantships provide:

- A full or partial tuition scholarship
- A stipend
- Health insurance/benefits may be provided, depending on the funding source

### ***Fellowships***

For PhD students in the cancer epidemiology track, fellowships funded by an NCI T32 training grant are available for qualified students. Fellows receive a stipend and funds for tuition, as well as some funding for research. Applications to the training program are generally made before or during the first year in the doctoral program. Additional information is included below in the section regarding the cancer epidemiology track in the PhD program.

## TUITION SCHOLARSHIPS

PhD students who are awarded a graduate assistantship may also be eligible for a tuition scholarship.

- A University tuition scholarship is limited to a maximum of 72 credit hours (minus any approved transfer credits); and/or up to eight semesters for PhD students. The limit also includes those semesters/credits of tuition support a student may have received while enrolled in another degree program or department at UB, regardless of whether or not those credits are applied to their current degree program.
- The tuition scholarship may not be used to offset the tuition costs associated with any course that will not be applied to the degree. A tuition scholarship does not cover courses taken as audit.
- Credit hour limits do not represent entitlements to tuition scholarship support for the specified number of credit hours. The limits refer to the total number of credit hours applied to the degree regardless of whether those credit hours consist of transfer credits, unsupported credit hours, credit supported from other sources, or any combination thereof.
- The scholarship does not cover credit hours taken during the summer semester or courses that are repeated.
- Students are responsible for all comprehensive and activity fees. These fees are not covered by the tuition scholarship. If covered by an outside health insurance carrier, students are responsible for waiving the University health insurance.

It is expected that all students who receive stipends and tuition scholarship awards do not hold jobs outside of the University.

Students who are not New York State residents, but are eligible to become residents for purposes of the tuition rate, are required to do so as soon as possible, but no later than one year after their initial appointment.

### ***Student Employee Health Insurance***

Students receiving graduate assistantships are eligible to enroll in the State Student Employee Health Insurance Plan (SEHP). Domestic students who meet eligibility requirements may choose between the University's mandatory student health insurance plan and the SEHP. F1 visa holders must enroll in the state sponsored plan. Students choosing to enroll in SEHP must enroll within 30 days of the effective date of their appointment. Enrollment sessions are held each Fall semester.

## **GRADUATE STUDENT TRAVEL AWARD (ROBERT O'SHEA AWARD)**

The *Robert O'Shea Student Travel Award* was established in honor of Robert O'Shea, PhD, associate professor emeritus, who served from 1977-1997 as the first Director of Graduate Studies in the Department of Epidemiology and Environmental Health.

The *Robert O'Shea Student Travel Award* provides funds for students traveling to present their research at professional meetings. Students interested in applying for this award should submit a written request to the Department's finance committee chair. Letters should be addressed and emailed to the attention of the finance committee chair.

**Since funds for student travel are limited, students are *highly* encouraged to submit for approval of the *Robert O'Shea Travel Award* prior to submitting an abstract to a conference.**

- Funds are limited to support students who have an accepted presentation (poster or oral presentation) at a meeting.
- However, submission for approval of the *Robert O'Shea Travel Award* can occur after the abstract is submitted but before travel to the conference.
- Submission for this travel award after the abstract presentation has occurred is not allowed.
- Students can apply for the *Robert O'Shea Travel Award* for a conference occurring up to one year after graduation.

**Please note that receipt of the award is contingent on both the quality of scientific work and availability of departmental funds. Rules for abstract submission described above apply.**

**Important:** Original receipts are required to receive reimbursement. All students should see the Secretary to the Chair *prior to incurring expenses* to discuss and review the University and Departmental policies regarding travel. The department cannot reimburse for items such as tax, liquor, or upgrades (hotel, air, transportation).

Funding is NOT guaranteed and depends on availability of funds in the Department and the number of requests received in any one year.



### Student Travel Request Application Checklist

- ✓ One request per student per academic year (July 1 – June 30). Maximum allowable per year:  
PhD - \$800; MS and MPH - \$400.
- ✓ In order to receive a travel award, students must present either a poster or oral presentation at that meeting.
- ✓ Presentations must be related to their research in the department or their research work in epidemiology, environmental health, health services administration, or public health.
- ✓ Students must submit an application in writing to the finance committee chair.
- ✓ The application must include:
  - ✓ Name
  - ✓ Names of co-authors
  - ✓ Title and abstract
  - ✓ Mentor's name (mentor needs to co-sign the request or send support letter/email)
  - ✓ Meeting details (conference, location, dates)
  - ✓ Meeting/abstract information website
  - ✓ List of expected expenses
- ✓ Funds can be used for meeting registration, transportation, hotel accommodations and per diem according to the rules/regulations set forth by the University at Buffalo.
- ✓ All presentations and posters funded by the department must include the UB logo. EEH should be the primary affiliation listed (along with Roswell Park Comprehensive Cancer Center (RPCCC) or others when applicable).
- ✓ Posters and presentations must be approved by the student's EEH advising faculty member before presentation. The mentor is responsible to oversee this.
- ✓ A copy of the final presentation or poster should be given to the department for posting (small color version).

## **SAXON GRAHAM RESEARCH AWARD**

The *Saxon Graham Research Award* provides funds to PhD students to support research activities undertaken toward the completion of a doctoral dissertation. The amount of the award may vary depending on the year; typically, one award is funded annually in the amount of \$1,500 - \$2,000. The call for applications comes out in June each year and applications are due August 1.

Eligible students are doctoral students in the PhD in epidemiology who have passed the comprehensive examination. Awarded funds may be applied towards research activities such as participant recruitment, clinical specimen analysis, travel to meet with collaborators, or other unique and justifiable needs.

Funds must be spent according to University guidelines. A lump sum of funds will not be given to the awardee. Instead, staff from the department will work with the awardee to procure items or plan travel, as needed, and according to the awardee's proposed budget.

### Call for Applications Materials Checklist

- ✓ Specific aims (NIH format): maximum of two single-sided pages detailing study rationale and aims
- ✓ Biosketch (NIH format)
- ✓ Budget and budget justification: maximum of two single-sided pages detailing proposed expenditure of Award funds

## **SAXON GRAHAM AWARD**

This annual award to a recent PhD in epidemiology graduate was established in 1997 to honor the excellent leadership provided by the late Saxon Graham, PhD, professor emeritus and chair of the Department of Epidemiology and Environmental Health from 1981 to 1991. The award is for overall excellence as a doctoral student.

Eligible students are those who defended their dissertation by August 30 of the previous year. To be eligible, students must have gathered epidemiologic data fairly extensively during their career (primary data collection), either for their dissertation or for another epidemiologic purpose.

Nominations come from the student's major professor, committee member or other departmental faculty, and are due by January 15. Selection for the award is made by the Education Committee. The award is given at the Annual Saxon Graham Lecture, during the spring semester (usually in April).

## **OTHER OPTIONS**

### ***Complete List of Scholarships, Fellowships and Awards***

<https://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/financial-assistance/scholarships-fellowships-and-awards.html>

### ***UB Office of Financial Aid***

<http://financialaid.buffalo.edu/graduate/index.php>

**MASTER OF PUBLIC HEALTH  
(MPH)**

# MASTER OF PUBLIC HEALTH (MPH)

## DEGREE REQUIREMENTS

The MPH degree concentrations require a minimum of **49 credit hours for the Epidemiology MPH, 45-46 credit hours for the Environmental Health MPH, and 47-48 credit hours for the Health Services Administration MPH** (33 of these credits for each concentration must be from UB).

Up to 6 credits may be waived and up to 9 credits may be transferred based on previously completed graduate coursework. Regardless of any waivers/substitutions/transfers, a minimum of 43 credit hours must be completed to graduate from the School of Public Health and Health Professions.

Students must maintain a minimum overall GPA of 3.0 and a minimum grade of B (3.0) in all required courses. Note: B- (2.67) is below the minimum grade for **required courses**.

### ***Foundational Courses for All MPH Concentrations - Required***

- CHB 501 Study of Health Behavior (3 credit)
- EEH 501 Principles of Epidemiology (4 credits)
  - EH and HSA concentrations can take EEH 500 Introduction to Epidemiology (3 credits) instead
- EEH 530 Introduction to Health Care Organization (3 credits)
- EEH 550 Environmental Health (3 credits)
- EEH 590 Contemporary Issues in Public Health (1 credit, students must take for 3 semesters)

### ***Statistics Requirement***

- EPI concentration
  - EEH 505 (LAB) Application of Biostatistics to Epidemiology I (1 credit)
  - STA 527(LEC) Introduction to Biostatistics I (3 credits)  
(It is also **strongly recommended** that MPH EPI students sit in (not register for) STA 527 (REC) Introduction to Biostatistics I)
- EH and HSA concentrations
  - STA 527 (LEC) Introduction to Biostatistics I (3 credits)
  - STA 527 (REC) Introduction to Biostatistics I (1 credit)

The statistics requirement must be completed in the first semester.

### ***Biology Requirement***

- EEH 520 Biological Basis of Public Health (3 credits)

Students with college-level coursework in human biology, or anatomy and physiology may be approved to waive this course and take an additional elective.

CREDITS FOR REQUIRED FOUNDATIONAL COURSES FOR ALL CONCENTRATIONS = 22-23 CREDITS

***EEH Work in Progress (WIP) Group***

The purpose of the EEH WIP is to learn about current student and faculty research within our department and provide a venue to receive and give constructive feedback on ongoing work. EEH WIP provides a weekly opportunity during the fall and spring semesters for EEH researchers to present new hypotheses, ongoing research and manuscripts in development. We encourage all students (MPH, MS, and PhD), postdoctoral fellows, and faculty to participate.

The following types of topics can be presented: 1) discuss a proposal for a planned study or analysis, 2) present data on an ongoing analysis, or 3) practice a talk on a completed project. WIP is not intended to be a journal club. Work presented by a student or postdoctoral fellow is decided by the student in consultation and agreement from the faculty with whom the student is working. It is strongly suggested that you invite your advisor to the WIP when you talk about research you have conducted with that individual.

EEH WIP is not a formal course.

**In addition to the above, requirements vary based on the concentration. Concentration specific degree requirements are noted in the following pages.**

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## *EPIDEMIOLOGY MPH CONCENTRATION*

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### ***Epidemiology MPH Field Training Experience - Required***

- EEH 544 MPH Field Training (3 credits + 1 credit IPE (Interprofessional Education))

Field training hours may be completed throughout the course of the program, including summer and winter sessions. Three credits of Field Training and one credit of IPE are required but an additional 3 credits of Field Training can be completed and counted as a concentration area elective. Field Training forms are submitted electronically through the online system (link shown in “Sources of Information” at the end of the Handbook).

#### Waiver Request

With relevant prior experience and/or graduate education, you may be able to request to waive 3 credits of EEH 544 MPH Field Training. See website for further information:

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/epidemiology-mph/requirements-and-curriculum/waiver-requests.html>

### ***Epidemiology MPH Integrative Project - Required***

- EEH 630 MPH Integrative Project (3 credits)

CREDITS FOR FIELD TRAINING AND INTEGRATIVE PROJECT = 7 CREDITS

### ***Epidemiology MPH Concentration Courses - Required***

- EEH 502 Advanced Methodology (3 credits)
- EEH 506 Application of Biostatistics to Epidemiology II (4 credits)
- EEH 573 Epidemiology of Infectious Diseases (3 credits)

### ***Epidemiology MPH Elective Courses – 3 courses required from this list***

- EEH 510 Principles of Measurement in Public Health (annual)
- EEH 521 Global Health (annual)
- EEH 544 MPH Field Training (additional 3 credits beyond the required 4 credits)
- EEH 570 Cancer Epidemiology (annual)
- EEH 571 Epidemiology of Cardiovascular Disease (annual)
- EEH 572 Nutritional Epidemiology (biennial)
- EEH 574 Epidemics and Outbreaks (biennial)
- EEH 575 Epidemiologic Applications to Environmental Health (biennial)
- EEH 577 Perinatal Epidemiology (biennial)

Note: Check current class schedule for course offerings (frequency and semester). All courses are 3 credits.

CREDITS FOR EPIDEMIOLOGY MPH CONCENTRATION AND ELECTIVE COURSES = 19 CREDITS

**NOTE FOR ALL MPH STUDENTS:** Students can petition to take courses outside their concentration if the course is relevant to their future career plans and they obtain permission of the course instructor and the MPH Graduate Director.

**Recommended Two Year Course Sequence for Epidemiology MPH Concentration**

(Course offerings may change and some courses are offered biennially; actual program tailored to student)

<b>EPIDEMIOLOGY (49 credits)</b>	
<b>Year 1: Fall Semester</b>	<b>Year 1: Spring Semester</b>
CHB 501 Study of Health Behavior (3) EEH 501 Principles of Epidemiology (4) EEH 505 Application of Biostatistics to Epidemiology I (1) EEH 530 Introduction to Health Care Organization (3) EEH 590 Contemporary Issues in Public Health (1)# STA 527 (LEC) Introduction to Biostatistics I (3)  Total credits=15	EEH 502 Advanced Methodology (3) EEH 506 Application of Biostatistics to Epidemiology II (4) EEH 520 Biological Basis of Public Health (3) EEH 550 Environmental Health (3) EEH 590 Contemporary Issues in Public Health (1)#  Total credits=14
<b>Year 2: Fall Semester</b>	<b>Year 2: Spring Semester</b>
EEH 544 MPH Field Training (4)* EEH 573 Epidemiology of Infectious Diseases (3) EEH 590 Contemporary Issues in Public Health (1)#  Two concentration course electives (6)  Total credits=14	EEH 630 MPH Integrative Project (3)  One concentration course elective (3)  Integrative project presentation  Total credits=6

\***EEH 544, MPH Field Training** hours may be completed throughout the course of the program, including summer and winter sessions. Four credits of Field Training are required but an additional 3 credits of Field Training can be completed and counted as a concentration area elective. Field Training forms are submitted electronically through the online system (link shown in “Sources of Information” at the end of the Handbook).

#**EEH 590, Contemporary Issues in PH** (students take 3 semesters, and should register for at least 1 fall and 1 spring semester).

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## **ENVIRONMENTAL HEALTH MPH CONCENTRATION**

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### ***Environmental Health MPH Field Training Experience - Required***

- EEH 544 MPH Field Training (3 credits + 1 credit IPE (Interprofessional Education))

Field training hours may be completed throughout the course of the program, including summer and winter sessions. Three credits of Field Training and one credit of IPE are required but an additional 3 credits of Field Training can be completed and counted as a concentration area elective. Field Training forms are submitted electronically through the online system (link shown in “Sources of Information” at the end of the Handbook).

#### Waiver Request

With relevant prior experience and/or graduate education, you may be able to request to waive 3 credits of EEH 544 MPH Field Training. See website for further information:

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/environmental-health-mp/requirements-and-curriculum/waiver-requests.html>

### ***Environmental Health Integrative Project - Required***

- EEH 630 MPH Integrative Project (3 credits)

CREDITS FOR FIELD TRAINING AND INTEGRATIVE PROJECT = 7 CREDITS

### ***Environmental Health MPH Concentration Courses - Required***

- EEH 551 Advanced Environmental Health Sciences (3 credits)
- PMY 626 Toxicology Principles and Practices (2 credits)
- PMY 627 Toxicology at Target Organs (2 credits)

### ***Environmental Health MPH Elective Courses – 3 courses required from this list***

- CIE 563 Air Pollution
- CIE 569 Hazardous Waste Management
- EEH 521 Global Health (annual) (3 credits)
- EEH 544 MPH Field Training (additional 3 credits beyond the required 4 credits)
- EEH 575 Epidemiologic Applications to Environmental Health (biennial) (3 credits)
- GEO 506 Geographical Information Systems
- URP 604 Community Food Systems Planning
- URP 605 Built Environment and Health

Note: Check current class schedule for course offerings (frequency and semester) and credits per course.

CREDITS FOR ENVIRONMENTAL HEALTH MPH CONCENTRATION AND ELECTIVE COURSES = 16 CREDITS

### **NOTE FOR ALL MPH STUDENTS:**

Students can petition to take courses outside their concentration area if the course is relevant to their future career plans and they obtain permission of the course instructor and the MPH Graduate Director.

Students interested in global environmental health are encouraged to take elective courses from global population health and from global environmental health topics. The recommended elective courses are listed below. In addition, students would choose field placement sites, which have a strong global environmental health component, addressing water quality, sanitation, hygiene, air pollution, built environment etc.

#### ***Global Population Health***

- CHB 522 Refugee Health for Populations
- CHB 625 Health Disparities
- EEH 521 Global Health (3 credits)
- GEO 512 Geography of Health

#### ***Global Environmental Health Topics***

- CIE 563 Air Pollution
- EEH 573 Epidemiology of Infectious Diseases (3 credits)



**Recommended Two Year Course Sequence for Environmental Health MPH Concentration**

(Course offerings may change and some courses are offered biennially; actual program tailored to student)

<b>ENVIRONMENTAL HEALTH (46 credits, EEH 501 Option)</b>	
<b>Year 1: Fall Semester</b>	<b>Year 1: Spring Semester</b>
CHB 501 Study of Health Behavior (3) EEH 501 Principles of Epidemiology (4) EEH 590 Contemporary Issues in Public Health (1)# STA 527 (LEC) Introduction to Biostatistics I (3) STA 527 (REC) Introduction to Biostatistics I (1)  Total credits=12	EEH 520 Biological Basis of Public Health (3) EEH 550 Environmental Health (3) EEH 590 Contemporary Issues in Public Health (1)#  Two concentration course electives (6)  Total credits=13
<b>Year 2: Fall Semester</b>	<b>Year 2: Spring Semester</b>
EEH 530 Introduction to Health Care Organization (3) EEH 544 MPH Field Training (4)* EEH 590 Contemporary Issues in Public Health (1)# PMY 626 Toxicology Principals and Practices (2) PMY 627 Toxicology at Target Organs (2)  One concentration course elective (3)  Total credits=15	EEH 551 Advanced Environmental Health Sciences (3) EEH 630 MPH Integrative Project (3)  Integrative project presentation  Total credits=6

\***EEH 544, MPH Field Training** hours may be completed throughout the course of the program, including summer and winter sessions. Four credits of Field Training are required but an additional 3 credits of Field Training can be completed and counted as a concentration area elective. Field Training forms are submitted electronically through the online system (link shown in “Sources of Information” at the end of the Handbook).

#**EEH 590, Contemporary Issues in PH** (students take 3 semesters, and should register for at least 1 fall and 1 spring semester).

<b>ENVIRONMENTAL HEALTH (45 credits, EEH 500 Option)</b>	
<b>Year 1: Fall Semester</b>	<b>Year 1: Spring Semester</b>
CHB 501 Study of Health Behavior (3) EEH 590 Contemporary Issues in Public Health (1)# PMY 626 Toxicology Principals and Practices (2) PMY 627 Toxicology at Target Organs (2) STA 527 (LEC) Introduction to Biostatistics I (3) STA 527 (REC) Introduction to Biostatistics I (1)  Total credits=12	EEH 500 Introduction to Epidemiology (3) EEH 520 Biological Basis of Public Health (3) EEH 550 Environmental Health (3) EEH 590 Contemporary Issues in Public Health (1)#  One concentration course elective (3)  Total credits=13
<b>Year 2: Fall Semester</b>	<b>Year 2: Spring Semester</b>
EEH 530 Introduction to Health Care Organization (3) EEH 544 MPH Field Training (4)* EEH 590 Contemporary Issues in Public Health (1)#  Two concentration course electives (6)  Total credits=14	EEH 551 Advanced Environmental Health Sciences (3) EEH 630 MPH Integrative Project (3)  Integrative project presentation  Total credits=6

\***EEH 544, MPH Field Training** hours may be completed throughout the course of the program, including summer and winter sessions. Four credits of Field Training are required but an additional 3 credits of Field Training can be completed and counted as a concentration area elective. Field Training forms are submitted electronically through the online system (link shown in “Sources of Information” at the end of the Handbook).

#**EEH 590, Contemporary Issues in PH** (students take 3 semesters, and should register for at least 1 fall and 1 spring semester).

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## HEALTH SERVICES ADMINISTRATION MPH CONCENTRATION

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### **Health Services Administration MPH Field Training Experience - Required**

- EEH 544 MPH Field Training (3 credits + 1 credit IPE (Interprofessional Education))

Field training hours may be completed throughout the course of the program, including summer and winter sessions. Three credits of Field Training and one credit of IPE are required but an additional 3 credits of Field Training can be completed and counted as a concentration area elective. Field Training forms are submitted electronically through the online system (link shown in "Sources of Information" at the end of the Handbook).

#### Waiver Request

With relevant prior experience and/or graduate education, you may be able to request to waive 3 credits of EEH 544 MPH Field Training. See website for further information:

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/health-services-administration-mph/requirements-and-curriculum/waiver-requests.html>

### **Health Services Administration Integrative Project - Required**

- EEH 630 MPH Integrative Project (3 credits)

CREDITS FOR FIELD TRAINING AND INTEGRATIVE PROJECT = 7 CREDITS

### **Health Services Administration MPH Concentration Courses - Required**

- EEH 536 Health Policy in the United States (3 credits)
- EEH 538 Introduction to Health Economics (3 credits)

### **Health Services Administration MPH Elective Courses – 4 courses required from the list**

- BMI 504 Data Analysis, and Research Methods in Biomedical Informatics
- BMI 506 Bioinformatics and Translational Research Informatics
- EEH 510 Principles of Measurement in Public Health
- EEH 531 Administrative Theory and Practice for Public Health Practitioners
- EEH 532 Financial Management for Public Health Professionals
- EEH 537 Public Health: Legal and Ethical Perspectives
- EEH 539 The Business of Health Care
- EEH 544 MPH Field Training (additional 3 credits beyond the required 4 credits)
- EEH 611 Analysis of Health Data
- LAW 606 Introduction to Health Care Law
- MGH 632 Healthcare Strategy and Ops
- MGH 642 Innovators in Health Care
- MGH 644 Healthcare Delivery Models
- MGH 645 Transformative Applications in Health Care Management
- MGO 635 Healthcare Operations Management
- PHM 730 Topics in Pharmacy Law (2 credits)
- PHM 736 Pharmacoeconomics and Pharmacoepidemiology (2 credits)
- SW 506 Theories of Organizational Behavior and Development
- SW 564 Administration and Management

Note: Check current class schedule for course offerings (frequency and semester) and credits per course.

CREDITS FOR HEALTH SERVICES ADMINISTRATION MPH CONCENTRATION AND ELECTIVE COURSES = 18 CREDITS

**NOTE FOR ALL MPH STUDENTS:** Students can petition to take courses outside their concentration area if the course is relevant to their future career plans and they obtain the permission of the course instructor and the MPH Graduate Director.

**Recommended Two Year Course Sequence for Health Services Administration MPH Concentration**  
 (Course offerings may change and some courses are offered biennially; actual program tailored to student)

<b>HEALTH SERVICES ADMINISTRATION (48 credits, EEH 501 Option)</b>	
<b>Year 1: Fall Semester</b>	<b>Year 1: Spring Semester</b>
CHB 501 Study of Health Behavior (3) EEH 501 Principles of Epidemiology (4) EEH 590 Contemporary Issues in Public Health (1)# STA 527 (LEC) Introduction to Biostatistics I (3) STA 527 (REC) Introduction to Biostatistics I (1)  Total credits=12	EEH 520 Biological Basis of Public Health (3) EEH 538 Introduction to Health Economics (3) EEH 550 Environmental Health (3) EEH 590 Contemporary Issues in Public Health (1)#  One concentration course elective (3)  Total credits=13
<b>Year 2: Fall Semester</b>	<b>Year 2: Spring Semester</b>
EEH 530 Introduction to Health Care Organization (3) EEH 536 Health Policy in the United States (3) EEH 544 MPH Field Training (4)* EEH 590 Contemporary Issues in Public Health (1)#  One concentration course elective (3)  Total credits=14	EEH 630 MPH Integrative Project (3)  Two concentration course electives (6)  Integrative project presentation  Total credits=9

\***EEH 544, MPH Field Training** hours may be completed throughout the course of the program, including summer and winter sessions. Four credits of Field Training are required but an additional 3 credits of Field Training can be completed and counted as a concentration area elective. Field Training forms are submitted electronically through the online system (link shown in “Sources of Information” at the end of the Handbook).

#**EEH 590, Contemporary Issues in PH** (students take 3 semesters, and should register for at least 1 fall and 1 spring semester).

<b>HEALTH SERVICES ADMINISTRATION (47 credits, EEH 500 Option)</b>	
<b>Year 1: Fall Semester</b>	<b>Year 1: Spring Semester</b>
CHB 501 Study of Health Behavior (3) EEH 530 Introduction to Health Care Organization (3) EEH 536 Health Policy in the United States (3) STA 527 (LEC) Introduction to Biostatistics I (3) STA 527 (REC) Introduction to Biostatistics I (1)  Total credits=13	EEH 500 Introduction to Epidemiology (3) EEH 520 Biological Basis of Public Health (3) EEH 538 Introduction to Health Economics (3) EEH 550 Environmental Health (3) EEH 590 Contemporary Issues in Public Health (1)#  Total credits=13
<b>Year 2: Fall Semester</b>	<b>Year 2: Spring Semester</b>
EEH 544 MPH Field Training (4)* EEH 590 Contemporary Issues in Public Health (1)#  Two concentration course electives (6)  Total credits=11	EEH 590 Contemporary Issues in Public Health (1)# EEH 630 MPH Integrative Project (3)  Two concentration course electives (6)  Integrative project presentation  Total credits=10

\***EEH 544, MPH Field Training** hours may be completed throughout the course of the program, including summer and winter sessions. Four credits of Field Training are required but an additional 3 credits of Field Training can be completed and counted as a concentration area elective. Field Training forms are submitted electronically through the online system (link shown in “Sources of Information” at the end of the Handbook).

#**EEH 590, Contemporary Issues in PH** (students take 3 semesters, and should register for at least 1 fall and 1 spring semester).

## **ACCELERATED AND COMBINED MPH DEGREE PROGRAMS**

### ***Accelerated MPH***

Please refer to the website for information on the Accelerated MPH in Epidemiology, Environmental Health, and Health Services Administration.

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/epidemiology-mph/one-year-accelerated-mph.html>

### ***Example: One Year Course Sequence for Accelerated Epidemiology MPH***

(Course offerings may change and some courses are offered biennially; actual program tailored to student)

<b>EPIDEMIOLOGY ACCELERATED (45 to 48 credits)</b>	
<b>Year 1: Fall Semester</b>	<b>Year 1: Spring Semester</b>
CHB 501 Study of Health Behavior (3) EEH 501 Principles of Epidemiology (4) EEH 505 Application of Biostatistics to Epidemiology I (1) EEH 530 Introduction to Health Care Organization (3) EEH 573 Epidemiology of Infectious Diseases (3) EEH 590 Contemporary Issues in Public Health (1) STA 527 (LEC) Introduction to Biostatistics I (3)  One concentration course elective (3)  Total credits=21	EEH 502 Advanced Methodology (3) EEH 506 Application of Biostatistics to Epidemiology II (4) EEH 520 Biological Basis of Public Health (3)* EEH 550 Environmental Health (3) EEH 590 Contemporary Issues in Public Health (1)  Two concentration course electives (6)  Total credits=20 (17 if EEH 520 is waived)
<b>Summer Session</b>	
EEH 544 MPH Field Training (4)** EEH 630 MPH Integrative Project (3)  Integrative project presentation  Total credits=7	

**\*EEH 520, Biological Basis of Public Health:** It is the assumption that most students in this track will be waived out of the Biological Basis of Public Health course, as students accepted into this accelerated program are most likely to be health professionals. Therefore, a student would only take 17 credits in the second semester.

**\*\*EEH 544, MPH Field Training** hours may be completed throughout the course of the program, including summer and winter sessions. Four credits of Field Training are required but an additional 3 credits of Field Training can be completed and counted as a concentration area elective. Field Training forms are submitted electronically through the online system (link shown in "Sources of Information" at the end of the Handbook).

**Example: One Year Course Sequence for Accelerated Environmental Health MPH**

(Course offerings may change and some courses are offered biennially; actual program tailored to student)

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/environmental-health-mph/one-year-accelerated-mph.html>

<b>ENVIRONMENTAL HEALTH ACCELERATED (44 credits)</b>	
<b>Year 1: Fall Semester</b>	<b>Year 1: Spring Semester</b>
CHB 501 Study of Health Behavior (3) EEH 530 Introduction to Health Care Organization (3) EEH 536 Health Policy in the United States (3) STA 527 (LEC) Introduction to Biostatistics I (3) STA 527 (REC) Introduction to Biostatistics I (1)  <div style="text-align: right;">Total credits=13</div>	EEH 500 Introduction to Epidemiology (3) EEH 520 Biological Basis of Public Health (3) EEH 538 Introduction to Health Economics (3) EEH 550 Environmental Health (3) EEH 590 Contemporary Issues in Public Health (1)  <div style="text-align: right;">Total credits=13</div>
<b>Summer Session</b>	
EEH 544 MPH Field Training (4)** EEH 630 MPH Integrative Project (3)  Integrative project presentation  <div style="text-align: right;">Total credits=7</div>	

**\*EEH 520, Biological Basis of Public Health:** It is the assumption that most students in this track will be waived out of the Biological Basis of Public Health course, as students accepted into this accelerated program are most likely to be health professionals. Therefore, a student would need to take another concentration elective in the second semester.

**\*\*EEH 544, MPH Field Training** hours may be completed throughout the course of the program, including summer and winter sessions. Four credits of Field Training are required but an additional 3 credits of Field Training can be completed and counted as a concentration area elective. Field Training forms are submitted electronically through the online system (link shown in “Sources of Information” at the end of the Handbook).

**Example: One Year Course Sequence for Accelerated Health Services Administration MPH**  
 (Course offerings may change and some courses are offered biennially; actual program tailored to student)

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/health-services-administration-mph/one-year-accelerated-mph.html>

<b>HEALTH SERVICES ADMINISTRATION ACCELERATED (43-46 credits)</b>	
<b>Year 1: Fall Semester</b>	<b>Year 1: Spring Semester</b>
CHB 501 Study of Health Behavior (3) EEH 530 Introduction to Health Care Organization (3) EEH 536 Health Policy in the United States (3) EEH 590 Contemporary Issues in Public Health (1) STA 527 (LEC) Introduction to Biostatistics I (3) STA 527 (REC) Introduction to Biostatistics I (1)  Two concentration course electives (6)  <div style="text-align: right;">Total credits=20</div>	EEH 500 Introduction to Epidemiology (3) EEH 520 Biological Basis of Public Health (3)* EEH 538 Introduction to Health Economics (3) EEH 550 Environmental Health (3) EEH 590 Contemporary Issues in Public Health (1)  Two concentration course electives (6)  <div style="text-align: right;">Total credits=19 (16 if EEH 520 is waived)</div>
<b>Summer Session</b>	
EEH 544 MPH Field Training (4)** EEH 630 MPH Integrative Project (3)  Integrative project presentation  <div style="text-align: right;">Total credits=7</div>	

**\*EEH 520, Biological Basis of Public Health:** It is the assumption that most students in this track will be waived out of the Biological Basis of Public Health course, as students accepted into this accelerated program are most likely to be health professionals. Therefore, a student would only take 16 credits in the second semester.

**\*\*EEH 544, MPH Field Training** hours may be completed throughout the course of the program, including summer and winter sessions. Four credits of Field Training are required but an additional 3 credits of Field Training can be completed and counted as a concentration area elective. Field Training forms are submitted electronically through the online system (link shown in “Sources of Information” at the end of the Handbook).

### **Combined MPH Degree Programs**

It is possible for graduate students to complete a program leading to two master's degrees at the same time. The integrity of each degree must be observed by completing a minimum of 24 credit hours uniquely applied for each degree. No more than 10% of credit hours may be applied to both programs. In some programs, the curriculum may contain required courses that are common to both programs. Such required courses may be counted for both degree programs. In cases where one or more specific courses are explicitly required by both programs (i.e., not merely as acceptable electives), such course(s) are considered "shared courses" under policy definitions and will be the first course(s) counted toward the 10 percent limit. If those specific courses explicitly required by both programs exceed the normal 10 percent "shared courses" limit, the 10 percent limit is waived and all such courses may be counted toward both degrees. Each degree will be conferred separately upon completion of program requirements.

Please see the EEH website for more information regarding individual combined degree programs.

For the Health Services Administration MPH, the following combined degrees are offered:

MPH-HSA/JD

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/health-services-administration-mph/combined-degree-programs/mph-jd-program.html>

MPH-HSA/MBA

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/health-services-administration-mph/combined-degree-programs/mph-mba-program.html>

MPH-HSA/MD

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/health-services-administration-mph/combined-degree-programs/mph-md-program.html>

MPH-HSA/MSW

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/health-services-administration-mph/combined-degree-programs/mph-msw-program.html>

MPH-HSA/MUP

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/health-services-administration-mph/combined-degree-programs/mph-mup-program.html>

MPH-HSA/PharmD

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/health-services-administration-mph/combined-degree-programs/mph-pharmd-program.html>

For the Epidemiology MPH, the following combined degrees are offered:

BS/MPH-EPI

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/epidemiology-mph/combined-degree-programs/bs-mph-program.html>

MPH-EPI/MD

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/epidemiology-mph/combined-degree-programs/mph-md-program.html>

MPH-EPI/PharmD

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/epidemiology-mph/combined-degree-programs/mph-pharmd-program.html>

For the Environmental Health MPH, the following combined degrees are offered:

MPH-EH/MD

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/environmental-health-mph/combined-degree-programs/mph-md-program.html>

MPH-EH/MUP

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/environmental-health-mph/combined-degree-programs/mph-mup-program.html>



## **ADDITIONAL DEGREE REQUIREMENTS RELEVANT TO ALL MPH CONCENTRATIONS AND TRACKS**

### ***Integrative Project Overview***

In addition to the required and elective courses, all MPH students must complete an integrative project (EEH 630). The project will take the form of a written document completed during the concluding semester of the student's program. Students are encouraged to work on their project throughout the course of their program. Examples of integrative projects include analysis of a public health problem, a secondary data analysis, designing a program implementation, or writing a research grant, community service grant, or program evaluation proposal. Students are required to have a project committee for their integrative project.

### ***Project Committee***

With the advice of their advisor the student will select a project committee which includes a Major Professor who is a member or associate member of the UB Graduate Faculty whose primary geographic appointment is in the Department of EEH or Roswell Park Comprehensive Cancer Center (RPCCC) Department of Cancer Prevention and Control and one additional committee member who holds the rank of assistant, associate or full professor at the University to supervise work on their integrative project. Faculty other than the Major Professor do not have to qualify as Graduate Faculty. A list of eligible Graduate Faculty is available from the Graduate Program Coordinator.

Committee members of the integrative project should be involved throughout the design and conduct of the project. The student is encouraged to meet frequently with their committee. Faculty who geographically leave UB may remain on a student's committee for up to one year as a committee member, but not as Major Professor. If the Major Professor is no longer a full-time geographic EEH or RPCCC Cancer Prevention and Control faculty member, the Major Professor must be replaced, however they may remain on the committee as a Committee Member for up to one year. Students can petition the MPH Graduate Director to have the faculty member remain in exceptional circumstances.

### ***Integrative Project Proposal***

Students submit a 150-word summary of their *proposed* integrative project. The summary must be approved and signed by the student's Major Professor and submitted to the MPH Graduate Director by October 1 or March 1 of the semester in which they are registered for the integrative project EEH 630.

### ***Application to Candidacy***

The ***Application to Candidacy (ATC)*** is a document that includes a summary of courses to be applied toward a degree. The ATC should be completed in the second year (3<sup>rd</sup> semester). For students in the accelerated MPH programs, the ATC form should be completed and given to the Graduate Program Coordinator by February 1<sup>st</sup> in the second semester of their program. The form is available at: <http://grad.buffalo.edu/forms/atc.html>.

Once the ATC has been approved, a student is not required to enroll for 12 credits to be considered full-time provided they submit a ***Certification of Full-Time Status Form***. (See section on Certification of Full-Time Status).

#### *Application to Candidacy Checklist:*

- ✓ Complete (type) Parts 1-7

Part 1: Degree Program: Master of Public Health and concentration area

Part 2 and 3: Fill out if applicable

Part 4: All courses must be listed in chronological order. If an intended course(s) and/or credit hours change, the student must complete a Change Expected Conferral Date/Amend ATC). <http://grad.buffalo.edu/forms/amend-atc.html>

Part 5: If you have taken courses which will not be applied to the MPH degree, attach an unofficial UB transcript and cross out course(s) which will not be applied. Course credits must total 47, 45, or 46 depending on concentration (including waived, transferred and future credits).

Part 6: All courses must be listed in chronological order. If transcripts were submitted at the time of application to the program, the Department will attach.

Part 7: BE SURE TO SIGN YOUR ATC! Student signature and signatures of the Major Professor and all Committee Members are required (the student is responsible for obtaining signatures). Original signatures are required. ATCs submitted without all signatures will be returned to the student.

NOTE: Name and signatures for the Associate Dean for Academic and Student Affairs and the MPH Graduate Director are completed by the Department.

Submit form to the Graduate Program Coordinator for MPH Graduate Director's signature.

- ✓ Submit the completed ATC to the department **no later than FOUR weeks before the Graduate School's official deadline.**

- ✓ **Department deadlines are:**

September 1 for a February degree conferral

February 1 for a June degree conferral

June 1 for a September degree conferral

**Read Carefully:** The Application to Candidacy (ATC) form must be submitted to the Department a minimum of FOUR weeks prior to the Graduate School deadline. This will allow time for it to be reviewed and approved by the MPH Graduate Director and Associate Dean for Academic and Student Affairs before it is forwarded to the Graduate School. Incomplete ATCs will be returned to the student. ATCs received after the Department deadline may result in delay of degree conferral.

### ***Integrative Project Abstract***

All students must submit a 150-word abstract of their completed integrative project at the time of their presentation. The abstract must be submitted with the M-Form (see below).

### ***Integrative Project Oral Presentation and Defense***

In addition to their written integrative project, students do an oral presentation of their project on a date scheduled at the end of the semester. The integrative project defense consists of a 10-minute oral presentation followed by 5 minutes of questions. The presentation summarizes the student's integrative project.

### ***M-Form***

The ***M-Form*** (for AuD, DNP and Master's Degrees with Exam, Paper, Project or Portfolio) is prepared by the Graduate Program Coordinator and is brought by the student to the presentation of their integrative project. This form is signed by the Major Professor and committee member(s) after successful presentation of the integrative project, and submitted to the MPH Graduate Director along with a copy of the final abstract and integrative project. No ***M-Forms*** will be signed by the MPH Graduate Director and forwarded to the Graduate School without the required documents. The ***M-Form*** must be received at the Graduate School by the official deadline posted on the Graduate School website: <http://grad.buffalo.edu/forms/m-form-other.html>

An electronic copy of the integrative project must also be submitted to the Graduate Program Coordinator.

#### ***M-Form Checklist:***

- ✓ Notify the Graduate Program Coordinator of the title for the integrative project (a copy of the prepared ***M-Form*** and ***Graduation Information Form*** will be placed in the student's mailbox)
- ✓ Bring the following to the integrative project presentation:
  1. ***M-Form***
  2. Abstract of the integrative project
  3. Copy of integrative project
  4. ***Graduation Information Form***

### ***Graduation Information Form***

The ***Graduation Information Form*** should be completed and brought to the integrative project presentation. A copy will be provided at the integrative project presentation. The form is available at the following link:

<http://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/graduation-information-form.pdf>

### ***Research***

The diversity of faculty interest areas allows for many opportunities for research. MPH students may choose to be actively involved in research during their educational experience. Interested students should contact faculty to determine what opportunities are available, including for IPs.

### ***Professional Conduct***

The University and department hold standards for professional conduct which apply to all EEH students (see Warning on Plagiarism).

### ***Abstract Submission to Professional Meetings***

MPH students involved in research may present the findings of that research at research conferences. Students intending to submit abstracts to professional meetings must obtain written approval from their advisor PRIOR to submission. All abstracts must include a full citation of authorship.

### ***Time Limit to Complete the Degree***

The time limit for obtaining the MPH degree is FOUR years from the date of first registration in the degree program, excluding official leaves of absence, regardless of full- or part-time status.

### ***Extension of Time to Complete the Degree***

Students unable to complete the MPH program within the time limit must petition the Graduate School for an extension of time to complete the degree provided there exists adequate reason to justify such a request. The Graduate School will not approve an extension for 'personal reasons'; the petition must be specific and provide strong justification for the request. Students must provide a detailed description of work completed to date, a detailed month-to-month timeline for completion of the project/degree, and a written endorsement from the advisor/major professor. Requests for extensions must be made at least two weeks prior to the start of the semester. The ***Extension of Time Limit for Degree Completion*** form is available at the following link: <http://grad.buffalo.edu/forms/extension.html>

#### *Extension of Time Checklist:*

- ✓ Complete a ***Petition for an Extension of the Time Limit to Complete a Graduate Degree Program*** form
- ✓ Be sure to sign form and obtain signature of advisor/major professor
- ✓ Attach written statement indicating:
  - Cause of the delay
  - Detailed description of work completed thus far
  - Detailed month-to-month plan of work to be completed
- ✓ Attach written endorsement from advisor/major professor
- ✓ Forward to the Graduate Program Coordinator (do not send directly to the Graduate School)

### Checklist for MPH Degree Conferral

- ❑ 45-49 graduate credit hours, depending on the concentration, completed with an overall GPA of 'B' (3.0) average.
- ❑ A minimum grade of 'B' (3.0) in all required course work.
- ❑ Registration and attendance at the Contemporary Issues in Public Health (EEH 590).
- ❑ Continuous registration from the date of matriculation (unless on an approved leave of absence).
- ❑ An approved **Application to Candidacy** is on file in the Graduate School with all necessary attachments, including unofficial UB transcripts.
- ❑ If beyond the four-year time limit for completion of degree, an approved **Petition for an Extension of the Time Limit to Complete a Graduate Degree Program** is on file in the Graduate School.
- ❑ Review unofficial transcript and address any 'I' or 'J' grades.
- ❑ Successful completion and presentation of the integrative project.
- ❑ Abstract of integrative project and **M-Form** are received by the Graduate School within the established deadlines (the Graduate School does not require copies of a project).
- ❑ An electronic copy of the integrative project and **Graduation Information Form** must be submitted to the Department and the MPH Coordinator. The form is available at the following link:

<http://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/graduation-information-form.pdf>

<b>Degree Conferral Timetable</b>			
<b>For Degree Conferral on:</b>	<b>February 1</b>	<b>June 1</b>	<b>September 1</b>
Application to Candidacy due to the Department	<b>September 1</b>	<b>February 1</b>	<b>June 1</b>
Application to Candidacy due at the Graduate School	<b>October 1*</b>	<b>March 1*</b>	<b>July 1*</b>
ALL required materials must be received in the Graduate School by the official deadline posted on the Graduate School website ( <a href="http://grad.buffalo.edu/study/graduate/requirements.html">http://grad.buffalo.edu/study/graduate/requirements.html</a> )			

\* **Read Carefully:** The Application to Candidacy (ATC) form must be submitted to the Department a minimum of **FOUR weeks before it is due at the Graduate School**. This will allow time for it to be reviewed and approved by the MPH Graduate Director and the Associate Dean for Academic and Student Affairs before it is forwarded to the Graduate School. Incomplete ATCs will be returned to the student. ATCs received after the Department deadline may result in delay of degree conferral.

## **MPH COMPETENCIES**

All MPH concentrations have the same foundational competencies. For example, the following link is for the epidemiology concentration.

<http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/epidemiology-mph/competencies.html>

### ***MPH Foundational Competencies***

1. Apply epidemiological methods to the breadth of settings and situations in public health practice (EEH501 Principles of Epidemiology)
2. Select quantitative and qualitative data collection methods appropriate for a given public health context (EEH501 Principles of Epidemiology)
3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate (STA527 Introduction to Biostatistics I with STA527 lab or EEH505 lab)
4. Interpret results of data analysis for public health research, policy or practice (EEH501 Principles of Epidemiology, STA527 Introduction to Biostatistics I with STA527 lab or EEH505 lab)
5. Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings (EEH530 Introduction to Health Care Organization)
6. Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and societal levels (CHB501 Study of Health Behavior, EEH530 Introduction to Health Care Organization)
7. Assess population needs, assets and capacities that affect communities' health (CHB501 Study of Health Behavior)
8. Apply awareness of cultural values and practices to the design or implementation of public health policies or programs (CHB501 Study of Health Behavior)
9. Design a population-based policy, program, project or intervention (CHB501 Study of Health Behavior, EEH530 Introduction to Health Care Organization)
10. Explain basic principles and tools of budget and resource management (EEH530 Introduction to Health Care Organization)
11. Select methods to evaluate public health programs (CHB501 Study of Health Behavior, EEH530 Introduction to Health Care Organization)
12. Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence (EEH530 Introduction to Health Care Organization, EEH590 Contemporary Issues in Public Health Seminar)
13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes (CHB501 Study of Health Behavior)
14. Advocate for political, social or economic policies and programs that will improve health in diverse populations (CHB501 Study of Health Behavior)
15. Evaluate policies for their impact on public health and health equity (EEH530 Introduction to Health Care Organization)
16. Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making (CHB501 Study of Health Behavior, EEH590 Contemporary Issues in Public Health)
17. Apply negotiation and mediation skills to address organizational or community challenges (EEH 590 Contemporary Issues in Public)
18. Select communication strategies for different audiences and sectors (EEH530 Introduction to Health Care Organization, EEH590 Contemporary Issues in Public Health Seminar)
19. Communicate audience-appropriate public health content, both in writing and through oral presentation (EEH530 Introduction to Health Care Organization)
20. Describe the importance of cultural competence in communicating public health content (EEH590 Contemporary Issues in Public Health Seminar)
21. Perform effectively on interprofessional teams (EEH544 Field Training Experience)
22. Apply systems thinking tools to the public health issue (EEH550 Environmental Health, EEH590 Contemporary Issues in Public Health Seminar)

### ***Epidemiology (EPI) Concentration Competencies***

- EPI CS1. Plan, perform and report basic statistical calculations and analyses and critically read public health and medical care journal articles. (EEH 505, STA 527)
- EPI CS2. Examine data for the presence of confounding and effect modification, identify their presence and manage them appropriately. (EEH 502, EEH 506)
- EPI CS3. Explain how bias, confounding, effect modification and random error may affect the results of epidemiologic investigations and how they may be prevented or controlled. (EEH 502, EEH 506)
- EPI CS4. Describe basic approaches for the collection of primary data, the use of secondary data, and the assessment of the quality of data collection and measurements. (EEH 502)
- EPI CS5. Describe different principles of investigation for acute outbreaks versus chronic conditions or other adverse outcomes in populations. (EEH 573)
- EPI CS6. Apply descriptive techniques commonly used to summarize public health data. (EEH 505, EEH 506, STA 527)
- EPI CS7. Apply common statistical methods for inference. (EEH 505, EEH 506, STA 527)
- EPI CS8. Apply descriptive and inferential methodologies according to the type of study design for answering a particular research question. (EEH 505, EEH 506, STA 527)

### ***Environmental Health (EH) Concentration Competencies***

- EH CS1. Describe the activity and impact of biological, chemical and physical hazards on the human body, including the role of genetic factors, pathways and routes of exposure, fate within the body and adverse health effects. (PMY 626/627)
- EH CS2. Describe and apply a systematic approach in the investigation of the relationships between environmental agents and adverse health outcomes. (EEH 551)
- EH CS3. Interpret and read critically scientific literature in the environmental health sciences, including epidemiology, toxicology and relevant topics in biology, chemistry and medicine. (EEH 551, PMY 626/627)
- EH CS4. Integrate the above to analyze environmental health problems in specific population groups, including magnitude and distribution of exposures and adverse health outcomes, the role of contributing biological, psychological, sociocultural, economic and political factors as appropriate, and development and testing of hypotheses to link environmental hazards with adverse health outcomes. (EEH 551, PMY 626/627)
- EH CS5. Communicate results of scientific analysis of environmental health problems to appropriate organizations and stakeholders, including the public, legislative bodies, government agencies, industry, advocacy organizations and academia, to inform development and implementation of strategies for preventing and controlling those problems. (EEH 551, PMY 626/627, field placement and integrative project)

### ***Health Services Administration (HSA) Concentration Competencies***

- HSA CS1. Understand basic economics and political science concepts and how they are applied to the healthcare industry and public health. (EEH 536; EEH 538)
- HSA CS2. Understand the relationship between the financial, clinical and regulatory aspects and their impact on the current issues in healthcare delivery. (EEH 536; EEH 538)
- HSA CS3. Understand how clinical, financial and regulatory data are used for healthcare industry and public health legislation. (EEH 536; EEH 538)
- HSA CS4. Critically appraise evidence to understand and evaluate policy effects in health and healthcare context. (EEH 536; EEH 538)
- HSA CS5. Describe the political process for public health legislation to be proposed, financed and resourced, enacted, and evaluated. (EEH 536)
- HSA CS6. Apply the principles of program planning, development, budgeting, management, and evaluation to healthcare organizations and community health initiatives. (EEH 536)
- HSA CS7. Apply principles of strategic planning and marketing to public health and healthcare policy development at the local, state and federal level. (EEH 536)



**MASTER OF SCIENCE  
(MS)**

# MASTER OF SCIENCE IN EPIDEMIOLOGY (MS)

The goal of the MS program is to provide both theoretical and experiential training that prepares students to participate in conducting epidemiologic research including working independently and as part of an interdisciplinary team.

## **MS DEGREE REQUIREMENTS**

The MS degree requires 33 credit hours: a minimum of 27 course credit hours plus a maximum of six credit hours of thesis credit. Students must maintain a minimum overall GPA of 3.0 and a minimum grade of B (3.0) in all required courses. Note: B- (2.67) is below the minimum grade for required courses.

### ***Required Courses for Epidemiology MS***

#### Principles and Methods of Epidemiology Core Courses

- EEH 501 Principles of Epidemiology (4 credits)
- EEH 502 Advanced Methodology (3 credits)

#### Statistical Methods Core Courses

- EEH 505 Application of Biostatistics to Epidemiology I (1 credit)
- EEH 506 Application of Biostatistics to Epidemiology II (4 credits)
- STA 527 (LEC) Introduction to Biostatistics I (3 credits)
- STA 527 (REC) Introduction to Biostatistics I Recitation (1 credit)

#### Public Health Core Course

- CHB 550 Public Health and Population Wellbeing (3 credits)

#### MS Thesis Guidance

- EEH 600 Thesis Guidance (minimum of 1 credit required)

CREDITS FOR REQUIRED CORE COURSES FOR EPIDEMIOLOGY MS = 20 CREDITS

#### Elective Courses for Epidemiology MS

*Choose 3 Epidemiology Elective Courses (all courses are 3 credits):*

- EEH 570 Cancer Epidemiology (annual)
- EEH 571 Epidemiology of Cardiovascular Disease (annual)
- EEH 572 Nutritional Epidemiology (biennial)
- EEH 573 Epidemiology of Infectious Diseases (annual)
- EEH 574 Epidemics and Outbreaks (biennial)
- EEH 575 Epidemiologic Applications to Environmental Health (biennial)
- EEH 577 Perinatal Epidemiology (biennial)

Note: Check current class schedule for course offerings (frequency and semester).

CREDITS FOR REQUIRED EPIDEMIOLOGY MS ELECTIVE COURSES = 9 CREDITS

#### Graduate Seminar

- EEH 591 Graduate Seminar (0 Credits)

The graduate seminar is an opportunity to hear about epidemiologic research both from the department and school as well as from outside researchers. The seminars are an important complement to coursework for building an understanding of research methods and applications.

EEH 591 Graduate Seminar is a required course for:

- All full-time students
- All students who are certified full-time
- All full and part-time students who have completed their course work and are registered for a minimum of one credit hour of Thesis Guidance.

Students are required to register for and attend the weekly departmental seminars. The course will be assigned an 'S/U' grade. Students are allowed two unexcused absences per semester. An additional absence beyond the two may be granted ONLY for extenuating circumstances and requires the permission of the MS/PhD Graduate Director prior to the seminar.

CREDITS FOR REQUIRED GRADUATE SEMINAR = 0 CREDITS

***Recommended Options to Fulfill the Balance of Remaining Credit Hours***

The remaining credit hours can be fulfilled by any combination of the following:

- Any courses listed above as MS electives
- Other EEH epidemiology courses
- EEH 510 Principles of Measurement in Public Health (3 credits) (annual) **strongly recommended**
- EEH 600 Thesis Guidance (1-6 credits) (annual)

BALANCE OF CREDITS = 4 CREDITS

***EEH Work in Progress (WIP) Group***

The purpose of the EEH WIP is to learn about current student and faculty research within our department and provide a venue to receive and give constructive feedback on ongoing work. EEH WIP provides a weekly opportunity during the fall and spring semesters for EEH researchers to present new hypotheses, ongoing research and manuscripts in development. We encourage all students (MPH, MS, and PhD), postdoctoral fellows, and faculty to participate.

The following types of topics can be presented: 1) discuss a proposal for a planned study or analysis, 2) data on an ongoing analysis, or 3) practice a talk on a completed project. WIP is not a journal club. Work presented by a student or postdoctoral fellow should be reviewed and agreed on by the faculty advisor with whom the student is working. It is strongly suggested that the advisor be invited to the WIP for discussions of research supervised by that individual.

EEH WIP is not a formal EEH course.

**NOTE FOR ALL MS STUDENTS:** Students can petition to take courses outside the listed electives if the course is relevant to their future career plans and they obtain permission of the course instructor and the MS/PhD Graduate Director.

**Recommended MS Course Sequence**

(Course offerings may change and some courses are offered biennially; actual program tailored to student)

<b>MS IN EPIDEMIOLOGY (33 credits)</b>	
<b>Year 1: Fall Semester</b>	<b>Year 1: Spring Semester</b>
CHB 550 Public Health and Population Wellbeing (3) EEH 501 Principles of Epidemiology (4) EEH 505 Application of Biostatistics to Epidemiology I (1) EEH 510 Principles of Measurement in Public Health (3) ( <b>strongly recommended</b> ) EEH 591 Graduate Seminar (0) STA 527 (LEC) Introduction to Biostatistics I (3) STA 527 (REC) Introduction to Biostatistics I (1)  Total credits=15	EEH 502 Advanced Methodology (3) EEH 506 Application of Biostatistics to Epidemiology II (4) EEH 591 Graduate Seminar (0)  One epidemiology elective course (3)          Total credits=10
<b>Year 2: Fall Semester</b>	<b>Year 2: Spring Semester</b>
EEH 591 Graduate Seminar (0)  One to two epidemiology elective course(s) (3 to 6)  Thesis proposal defense     Total credits=3 to 6	EEH 591 Graduate Seminar (0) EEH 600 Thesis Guidance (2)*  One epidemiology elective course if still needed to meet the three required electives (3)   Thesis defense     Total credits=2 to 5

**\*EEH 600, Thesis Guidance:** Students may take 1 to 6 credit hours of thesis guidance but a minimum of 1 credit hour is required. This course sequence includes 2 credits.

## **MS DEGREE REQUIREMENTS - CLINICAL RESEARCH TRACK**

The specialized clinical research track within the MS program provides the MS student with skills and knowledge to design and conduct independent clinical research. The program is designed to be rigorous yet flexible with individualized training allowing for course electives in the research discipline including pharmacy, nursing, dentistry or medicine. Our interdisciplinary curriculum draws from epidemiology, medicine, pharmacy, nursing, dentistry, oncology, psychiatry, psychology, sociology, geography, biostatistics, management, law, nutrition, statistics and computer science.

### ***Required Courses for Epidemiology MS – Clinical Research Track***

#### Principles and Methods of Epidemiology Core Courses

- EEH 501 Principles of Epidemiology (4 credits)
- EEH 502 Advanced Methodology (3 credits)

#### Statistical Methods Core Courses

- EEH 505 Application of Biostatistics to Epidemiology I (1 credit)
- EEH 506 Application of Biostatistics to Epidemiology II (4 credits)
- STA 527 (LEC) Introduction to Biostatistics I (3 credits)
- STA 527 (REC) Introduction to Biostatistics I Recitation (1 credit)

#### Public Health Core Course

- CHB 550 Public Health and Population Wellbeing (3 credits)

#### Informatics Core Courses

*Choose one Informatics Core Course:*

- BCH 519 Introduction to Bioinformatics and Computational Biology (3 credits)
- BMI 501 Survey of Biomedical Informatics I (3 credits)
- STA 525 Statistics for Bioinformatics (3 credits)

#### MS Thesis Guidance

- EEH 600 Thesis Guidance (minimum of 1 credit required)

CREDITS FOR REQUIRED CORE COURSES FOR EPIDEMIOLOGY MS – CLINICAL RESEARCH TRACK = 23 CREDITS

#### Epidemiology Electives

*Choose 3 Epidemiology Elective Courses (all courses are 3 credits):*

- EEH 570 Cancer Epidemiology (annual)
- EEH 571 Epidemiology of Cardiovascular Disease (annual)
- EEH 572 Nutritional Epidemiology (biennial)
- EEH 573 Epidemiology of Infectious Diseases (annual)
- EEH 574 Epidemics and Outbreaks (biennial)
- EEH 575 Epidemiologic Applications to Environmental Health (biennial)
- EEH 577 Perinatal Epidemiology (biennial)

Note: Check current class schedule for course offerings (frequency and semester).

CREDITS FOR REQUIRED EPIDEMIOLOGY MS ELECTIVE COURSES IN CLINICAL TRACK = 9 CREDITS

#### Graduate Seminar

- EEH 591 Graduate Seminar (0 credits)

**Recommended Options to Fulfill the Balance of Remaining Credit Hours**

The balance of hours remaining should be filled by 1 credit of thesis guidance (EEH 600) or a clinically relevant course. There are numerous courses offered in the SPHHP and in the other departments of the Academic Health Center. Choice of the course should be with the approval of the student’s advisor.

BALANCE OF CREDITS = 1 CREDITS

**EEH Work in Progress (WIP) Group**

The purpose of the EEH WIP is to learn about current student and faculty research within our department and provide a venue to receive and give constructive feedback on ongoing work. EEH WIP provides a weekly opportunity during the fall and spring semesters for EEH researchers to present new hypotheses, ongoing research and manuscripts in development. We encourage all students (MPH, MS, and PhD), postdoctoral fellows, and faculty to participate.

The following types of topics can be presented: 1) discuss a proposal for a planned study or analysis, 2) data on an ongoing analysis, or 3) practice a talk on a completed project. WIP is not a journal club. Work presented by a student or postdoctoral fellow should be reviewed and agreed on by the faculty advisor with whom the student is working. It is strongly suggested that the advisor be invited to the WIP for discussions of research supervised by that individual.

EEH WIP is not a formal EEH course.

**Recommended MS Course Sequence – Clinical Research Track**

(Course offerings may change and some courses are offered biennially; actual program tailored to student)

<b>MS IN EPIDEMIOLOGY – CLINICAL RESEARCH TRACK (33 credits)</b>	
<b>Year 1: Fall Semester</b>	<b>Year 1: Spring Semester</b>
CHB 550 Public Health and Population Wellbeing (3) EEH 501 Principles of Epidemiology (4) EEH 505 Application of Biostatistics to Epidemiology I (1) EEH 591 Graduate Seminar (0) STA 527 (LEC) Introduction to Biostatistics I (3) STA 527 (REC) Introduction to Biostatistics I (1)  Total credits=12	EEH 502 Advanced Methodology (3) EEH 506 Application of Biostatistics to Epidemiology II (4) EEH 591 Graduate Seminar (0)  Take the required informatics core course or one required epidemiology elective (3)**  Total credits=10
<b>Year 2: Fall Semester</b>	<b>Year 2: Spring Semester</b>
EEH 591 Graduate Seminar (0)  Take the required informatics core course and one required epidemiology elective (6)** or Take two required epidemiology electives (6)  Thesis proposal defense  Total credits=6	EEH 591 Graduate Seminar (0) EEH 600 Thesis Guidance (2)*  Take the required informatics core course or one required epidemiology elective (3)**  Thesis defense  Total credits=5

**\*EEH 600, Thesis Guidance:** Students may take 1 to 6 credit hours of thesis guidance but a minimum of 1 credit hour is required. This course sequence includes 2 credits.

\*\*Students are required to take one of three informatics courses: BCH 519, BMI 501, STA 525

## **ADDITIONAL DEGREE REQUIREMENTS RELEVANT TO ALL MS TRACKS**

### ***Thesis Overview***

The thesis provides the opportunity to do independent epidemiologic research (with a clinical focus for the clinical research track) that demonstrates ability to identify a problem, develop a research design, and analyze, interpret and discuss data with the purpose of developing or testing theory. Students are urged to examine copies of theses on file in the Department's graduate office or online at UB libraries.

### ***Thesis Committee***

When all formal coursework has been completed, and with the advice of their advisor, the student selects a committee consisting of a major professor who is a member or associate member of the UB Graduate Faculty and whose primary geographic appointment is in the Department of EEH or Roswell Park Comprehensive Cancer Center (RPCCC) Department of Cancer Prevention and Control and one additional committee member who is also a member or associate member of the UB Graduate Faculty. More committee members can be added at the major advisor and student's discretion. A list of eligible members of the Graduate Faculty is available at the Graduate School website. The Graduate Program Coordinator can provide information regarding eligible faculty.

NOTE: geographic is defined as the department or unit of primary paying appointment where full-time professional services and activities are conducted.

All members of the thesis committee should be involved throughout the design and conduct of the original research project. The student is encouraged to meet frequently with their Committee. Faculty who leave UB may remain on a student's committee for up to one year as a committee member, but not as major professor. If the major professor is no longer a full-time EEH or RPCCC Cancer Prevention and Control faculty member, the major professor must be replaced, however the faculty member who left may remain on the committee as a committee member for up to one year. Students may petition the MS/PhD Graduate Director to have the faculty member remain on the committee in exceptional circumstances.

BEFORE a student begins work on their thesis, they must first have their committee approved by the MS/PhD Graduate Director using the ***Thesis Committee Approval Form***. This form can be found at the link below:

<https://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/thesis-committee-approval-form.pdf>.

A description of the study hypothesis is also required.

#### ***Thesis Committee Checklist:***

- ✓ Submit the ***Thesis Committee Approval Form*** to the MS/PhD Graduate Director Studies BEFORE beginning work on the thesis

### ***Thesis Proposal Defense***

With guidance from the major professor and all committee members, the student develops a written study plan (proposal). This plan includes: a definition of the problem the student intends to address, a review of the relevant literature, statement of rationale and objectives, study questions and/or hypotheses (specific aim(s)), and a description of the intended design and methods, in regard to any sampling, data collection, analytic methods with mock tables, power calculations, data analysis, and study strengths and limitations.

Before a student can proceed with their thesis, they must defend their proposal at a formal defense with the major professor, all committee members and the MS/PhD graduate director present. If all committee members cannot be present, no more than one member may participate via conference telephone.

Students should allow a minimum of two weeks for their major professor/committee members to review all drafts and the final proposal. The major professor/committee members may set longer time limits if needed. Students should be respectful of faculty's time/workload. Approval of the proposal by the full committee is required in order to schedule the proposal defense.

The proposal, summarized on the **Abstract of Proposed Research Form** (<http://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/abstract-form-ms-and-phd.pdf>) must be approved by the full committee. The **Application to Candidacy** (ATC) and **Abstract of Research** are signed by the committee at the proposal defense (see sections on ATC and Abstract of the Proposed Research).

The MS proposal defense consists of a 20 to 25-minute presentation followed by questions from the committee. The presentation should include the background and rationale, study questions and hypotheses, and proposed study design and methods. The latter section should include information regarding data collection, analytic methods with mock tables, power calculations and study strengths and limitations. The full defense usually lasts about 1-1.5 hours.

*Proposal Defense Checklist:*

- ✓ With approval from the full committee, schedule the proposal defense
- ✓ Schedule a time that will allow for the MS/PhD program director to attend
- ✓ Reserve a room for the defense through the Graduate Program Coordinator
- ✓ Distribute copies of the approved final copy of the proposal to the committee
- ✓ Formally defend the proposal with the major professor and all committee members present
- ✓ Bring the completed **Application to Candidacy Form** to the defense for signature of the committee
- ✓ Submit the completed **Application to Candidacy Form** to the Graduate Program Coordinator for signature of the MS/PhD Graduate Director Studies

**Abstract of Proposed Research Form**

All students must submit an **Abstract of Proposed Research Form**. Be sure to follow the example format. The abstract form is signed by the committee at the proposal defense and submitted with the ATC (see section on Proposal Defense and ATC). The Abstract of Proposed Research Form remains in the Department. This form can be found at:

<http://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/abstract-form-ms-and-phd.pdf>

**Application to Candidacy**

The **Application to Candidacy (ATC)** is a document that includes a summary of courses to be applied toward a degree. The filing of this document is required when all formal course work has been completed, and after the student has successfully defended their proposal. The ATC must be presented at the proposal defense for signature of the committee. The ATC form can be found at: <http://grad.buffalo.edu/forms/atc.html>

Students must include an abstract of their research (**Abstract of Proposed Research Form**) as noted above.

Be sure to follow the example format. Once the ATC has been approved, a student is not required to enroll for 12 credit hours (or 9 credit hours if appointed as a graduate, teaching or research assistant) to be considered full-time for tuition assistantship/scholarship, loan deferral, or immigrant status. To be certified full-time a student must be registered for a minimum of one credit hour and submit a **Certification of Full-Time Status Form**. (See section on Certification of Full-Time Status). Be sure to refer to the checklist on the following page.



Application to Candidacy Checklist:

- ✓ Complete (type) Parts 1-7

Part 1: Degree Program: Master of Science in Epidemiology

Part 2 and 3: Fill out if applicable

Part 4: All courses must be listed in chronological order. If an intended course(s) and/or credit hours change, the student must complete a Change Expected Conferral Date/Amend ATC.  
<http://grad.buffalo.edu/forms/amend-atc.html>

Part 5: If you have taken courses which will not be applied to the MS degree, attach an unofficial UB transcript and cross out course(s) which will not be applied. Course credits must total 33 (including transferred and future credits).

Part 6: All courses must be listed in chronological order. If transcripts were submitted at the time of application to the program, the Department will attach.

Part 7: THE ATC MUST BE SIGNED! Student signature and signatures of the major professor and committee members are required (the student is responsible for obtaining signatures). Original signatures are required. ATCs submitted without all original signatures will be returned to the student.

NOTE: Name and signatures for the Associate Dean for Academic and Student Affairs and the MS/PhD Graduate Director Studies are completed by the Department.

Submit to the Graduate Program Coordinator for MS/PhD Graduate Director's signature.

- ✓ Include the **Abstract of Proposed Research Form** signed by the committee.
- ✓ Submit the completed ATC to the department **no later than FOUR weeks before the Graduate School's official deadline.**
- ✓ Department deadlines are:
  - September 1 for a February degree conferral
  - February 1 for a June degree conferral
  - June 1 for a September degree conferral

**Read Carefully:** The Application to Candidacy (ATC) form must be submitted to the Department a minimum of FOUR weeks prior to the Graduate School deadline. This will allow time for it to be reviewed and approved by the MS/PhD Graduate Director Studies and Associate Dean for Academic and Student Affairs before it is forwarded to the Graduate School. Incomplete ATCs will be returned to the student. ATCs received after the Department deadline may result in delay of degree conferral.

### **Thesis Defense**

All MS students must complete and formally defend a thesis approved by the student's major professor and all committee members. The major professor, all committee members, and the MS/PhD Graduate Director must be present for the final defense. In extenuating circumstances, if all committee members cannot be present, not more than one member may participate via conference telephone.

**Students should allow a minimum of two weeks for their major professor/committee members to review all drafts and final copy of the thesis.** The major professor/committee members may set longer time limits if needed. Students should be respectful of faculty's time/workload. **Approval of the thesis by the full committee is required in order to schedule the defense.**

In addition, a minimum of two weeks (14 days) notice must be allowed for the public posting of the defense. Prior to the posting of the defense, the final unbound copy of the thesis (in hard copy or pdf), approved by the student's committee must be on file in the department for review. NOTE: the thesis is bound AFTER the student has successfully defended their thesis.

The MS thesis defense consists of a 25 to 30-minute presentation followed about one hour of questions. The presentation summarizes the thesis work including background, rationale for the work, study questions and/or hypotheses, methods, results, and conclusions and strengths and limitations. The presentation is followed by questions from the committee and then from anyone else in attendance. If the committee prefers, they can allow the audience to ask questions prior to the committee. After the question period, the student is dismissed and the committee comes to a consensus as to whether or not the student passed and if anything additional, with respect to the thesis, needs to be addressed prior to completion of the degree. The student is admitted back to the room and the committee decision (with a possible request for items to be addressed) is communicated to the student.

#### Thesis Defense Checklist:

- ✓ When approval from the full committee is received, schedule an oral defense of the thesis:
  - Confirm date with the committee and MS/PhD Graduate Director
  - Confirm availability of room
- ✓ Provide the Department with an approved final copy of the thesis. NOTE: the thesis should be bound AFTER the defense in the event the Committee requires minor changes as a result of the defense.
- ✓ Notify the Graduate Program Coordinator of the defense date and title of the thesis.
- ✓ A room will be reserved and a public notice will be posted for the defense. A minimum of two weeks' notice (14 days) must be allowed for posting of the defense. A copy of the prepared **M-Form** and **Graduation Information Form** will be prepared and placed in the student's mailbox (see section on **M-Form**).

### **M-Form**

The **M-form** (for Master's Degrees with Thesis and all PhD Degrees) is prepared by the Graduate Program Coordinator and is brought by the student to the defense. Section 2 of the form is signed by the major professor and all committee members at the defense certifying the student has successfully defended their thesis. If, as a result of the defense, revisions to the thesis are required, the major professor retains the form and signs Section 3 only after the revisions have been examined and approved by all committee members. Signature of the MS/PhD Graduate Director is also required. The completed **M-Form** is submitted to the Graduate Program Coordinator allowing enough time for it to be received at the Graduate School by the official deadline posted on the Graduate School website <http://grad.buffalo.edu/content/dam/grad/study/mform-thesis.pdf>

NOTE: The M-Form will not be forwarded to the Graduate School until a bound copy of the thesis is submitted to the Department. In exceptional cases, the department may accept a bindery receipt in lieu of the bound copy.

*M-Form Checklist:*

- ✓ Present the **M-Form** at the thesis defense for signatures of the Committee and MS/PhD Graduate Director Studies
- ✓ Submit completed **M-Form** and **Graduation Information Form** to the Graduate Program Coordinator
- ✓ Submit bound copy of the thesis to the Department
- ✓ Submit electronic thesis to Graduate School (see below)

**Graduation Information Form**

The **Graduation Information Form** should be completed and brought to the thesis defense. A copy of the form will be provided at the time of the defense. The form is available at the following link:

<http://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/graduation-information-form.pdf>

**Submission of the Thesis**

The Graduate School requires electronic submission of the thesis. Guidelines for submission can be found on the website. Electronic submission can be made at: <http://grad.buffalo.edu/succeed/graduate/electronic-submission.html>

The Department requires one bound copy of the thesis. At least two weeks should be allowed for binding the final copy. Copies should be bound in boards covered with black imitation leather, with the title and author's name embossed, not printed, on the front in gold and the author's last name, degree and year of conferral of the degree on the spine (also in gold). Students should inquire whether or not their major professor and each committee member desires a bound copy prior to ordering one. Some faculty members may not wish to receive a bound copy. Ordering of bound copies for faculty members are the responsibility of the student.

**Guidelines for the Thesis Document**

Several style manuals are available that will answer a host of questions regarding the technical aspects of preparing the thesis or dissertation (see below).

American Psychological Association. <http://www.apastyle.org/>

Modern Language Association. <http://www.mla.org/>

University of Chicago, Chicago Manual of Style. <http://www.chicagomanualofstyle.org/>

Copies of the completed thesis are available for reference in the Department or online at the Health Sciences Library.

**Research and Professional Conduct**

The diversity of faculty interest areas allows for many opportunities for research. All MS students are expected to be actively involved in research throughout their educational experience. The University and department hold standards for professional conduct (see Warning on Plagiarism).

**Abstract Submission to Professional Meetings**

Students intending to submit abstracts to professional meetings must obtain written approval from their advisor PRIOR to submission. All abstracts must include a full citation of authorship.

**Time Limit to Complete the Degree**

The time limit for completing the MS degree is FOUR years from the date of first registration in the degree program, not including official leaves of absence, regardless of full- or part-time status. Of course, students will take four years only in exceptional cases. It is expected that students will complete their degree within two years.

### ***Extension of Time to Complete the Degree***

Students unable to complete the MS program within the time limit must petition the Graduate School for an extension of time to complete the degree provided there exists adequate reason to justify such a request. The Graduate School will not approve an extension for 'personal reasons;' the petition must be specific and present strong justification for the request. Students must provide a detailed description of work completed to date, a detailed month-to-month timeline for completion of the thesis/degree, and a written endorsement from the advisor/major professor. Requests for extensions should be made at least two weeks prior to the start of the semester. The ***Extension of Time Limit for Degree Completion*** is available at the following link: <http://grad.buffalo.edu/forms/extension.html>

#### *Extension of Time Checklist:*

- ✓ Complete ***Petition for an Extension of the Time Limit to Complete a Graduate Degree Program***
- ✓ Be sure to sign form
- ✓ Obtain signature of advisor/major professor
- ✓ Attach written statement indicating:
  - Cause of the delay
  - Detailed description of work completed thus far
  - Detailed month-to-month plan or work to be completed
- ✓ Attach written endorsement from advisor/major professor
- ✓ Forward to the Graduate Program Coordinator (do not send directly to the Graduate School)

**Checklist for MS Degree Conferral**

- ❑ 33 graduate credit hours are completed with an overall 'B' (3.0) average (a minimum of 27 credit hours of graduate course work plus a maximum of six credit hours of thesis credit).
- ❑ A minimum grade of 'B' (3.0) in all required course work.
- ❑ Registration and attendance at the graduate seminar when registered full-time, certified full-time, and/or while registered for a minimum of one credit hour of Thesis Guidance.
- ❑ Continuous registration from the date of matriculation (unless on an approved leave of absence).
- ❑ An approved **Application to Candidacy** is on file in the Graduate School with all necessary attachments, including unofficial UB transcripts.
- ❑ Submission of an approved **Abstract of Proposed Research Form**.
- ❑ If beyond the four-year time limit for completion of degree, an approved **Petition for an Extension of the Time Limit to Complete a Graduate Degree Program** is on file in the Graduate School.
- ❑ Review unofficial UB transcript and address any "I" or "J" grades.
- ❑ Successful completion and defense of a thesis.
- ❑ **M-Form** submitted to the Graduate School by the established deadlines.
- ❑ **Graduation Information Form** submitted to the Department. The form is available at the following link:  
<http://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/graduation-information-form.pdf>
- ❑ One bound copy of the thesis submitted to the Department. (Copies should also be provided to all Committee Members if desired).
- ❑ Electronic submission of the thesis to the Graduate School.

<b>Degree Conferral Timetable</b>			
<b>For Degree Conferral on:</b>	<b>February 1</b>	<b>June 1</b>	<b>September 1</b>
Application to Candidacy due to the Department	<b>September 1</b>	<b>February 1</b>	<b>June 1</b>
Application to Candidacy due at the Graduate School	<b>October 1*</b>	<b>March 1*</b>	<b>July 1*</b>
ALL required materials must be received in the Graduate School by the official deadline posted on the Graduate School website ( <a href="http://grad.buffalo.edu/study/graduate/requirements.html">http://grad.buffalo.edu/study/graduate/requirements.html</a> )			

\* **Read Carefully:** The Application to Candidacy (ATC) form must be submitted to the Department a minimum of FOUR weeks before it is due at the Graduate School. This will allow time for it to be reviewed and approved by the MS/PhD Graduate Director and the Associate Dean for Academic and Student Affairs before it is forwarded to the Graduate School. Incomplete ATCs will be returned to the student. ATCs received after the Department deadline may result in delay of degree conferral.

## **COMPREHENSIVE EXAMINATION**

Master's students who intend to pursue the PhD should consider taking the Comprehensive Exam while in the master's program at the end of their first year of coursework (see section on the Comprehensive Examination in the PhD section).

## **MS COMPETENCIES**

Found at <http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/epidemiology-MS/competencies.html>

- MS C1. Definition of Epidemiology.  
Define epidemiology and the range of epidemiologic practice in medicine, biomedical science and public health.
- MS C2. Study Designs and Measures.  
Describe the major epidemiologic study designs, their strengths and limitations, and their application for assessing the prevalence and incidence of disease and risk factors for disease in the population and in public health research.
- MS C3. Evaluation of Epidemiologic Data.  
Critically evaluate the results of epidemiologic studies for study design implementation, evaluating chance, bias, confounding and effect modification as part of interpreting study results and using them to make appropriate inferences.
- MS C4. Screening.  
Describe a public health screening program and identify its principles and limitations.
- MS C5. Surveillance.  
Describe a public health surveillance program and identify its principles and limitations.
- MS C6. Principles of Communicable and Non-Communicable Disease Prevention and Control.  
Describe the principles of communicable and non-communicable disease prevention and control.
- MS C7. Application of Biostatistics to Epidemiology.  
Apply and interpret common and appropriate statistical methodologies for answering epidemiologic research question.
- MS C8. Ethical Conduct of Human Subjects Research.  
Comprehend basic ethical and legal issues pertaining to the collection, use and dissemination of epidemiologic data; apply knowledge of human subjects' protections, informed consent, and confidentiality to research activities.
- MS C9. Culminating Thesis.  
Develop and execute a hypothesis-driven epidemiologic study, including a literature review and original data analysis culminating in a defensible written document (equivalent to one publishable manuscript) and oral presentation.

**DOCTOR OF PHILOSOPHY  
(PHD)**

# DOCTOR OF PHILOSOPHY IN EPIDEMIOLOGY (PhD)

The goal of the PhD program is to provide advanced theoretical and complex experiential training that allows students to independently lead and conduct all phases of an epidemiologic research project.

## **PHD DEGREE REQUIREMENTS**

The PhD degree requires 72 credit hours: a minimum of 60 hours of graduate courses plus a maximum of 12 hours of dissertation credit can be applied to the degree. Students must maintain a minimum overall GPA of 3.0 and a minimum grade of B (3.0) in all required courses. NOTE: B- (2.67) is below the minimum grade for required courses.

### ***Required Courses for Epidemiology PhD***

#### Principles and Methods of Epidemiology Core Courses

- EEH 501 Principles of Epidemiology (4 credits)
- EEH 502 Advanced Methodology (3 credits)
- EEH 601 Advanced Epidemiologic Study Designs (3 credits) \*

#### Statistical Methods Core Courses

- EEH 505 Application of Biostatistics to Epidemiology I (1 credit)
- EEH 506 Application of Biostatistics to Epidemiology II (4 credits)
- EEH 611 Analysis of Health Data (4 credits) \*
- STA 527 (LEC) Introduction to Biostatistics I (3 credits)
- STA 527 (REC) Introduction to Biostatistics I (1 credits)
- One advanced statistics course outside of the department such as:
  - NUS 695 Advanced Statistical Techniques (3 credits)
  - STA 503 Regression Analysis (3 credits)
  - STA 517 Categorical Data Analysis (3 credits)
  - STA 545, 546 Statistical Data Mining I, II (3 credits each)
  - STA 575 Survival Analysis (3 credits)

#### Public Health Core Course

- CHB 550 Public Health and Population Wellbeing (3 credits)

#### PhD Dissertation Guidance

- EEH 700 Dissertation Guidance (a minimum of 1 credit required)

CREDITS FOR REQUIRED CORE COURSES FOR EPIDEMIOLOGY PHD = 30 CREDITS

#### Elective Courses for Epidemiology PhD

Choose 4 Epidemiology Elective Courses (all courses are 3 credits):

- EEH 570 Cancer Epidemiology (annual)
- EEH 571 Epidemiology of Cardiovascular Disease (annual)
- EEH 572 Nutritional Epidemiology (biennial)
- EEH 573 Epidemiology of Infectious Diseases (annual)
- EEH 574 Epidemics and Outbreaks (biennial)
- EEH 575 Epidemiologic Applications to Environmental Health (biennial)
- EEH 577 Perinatal Epidemiology (biennial)
- EEH 610 Fundamentals of Grant Development (annual) \* (strongly recommended)
- EEH 670 Advanced Cancer Epidemiology and Prevention (biennial) \*
- EEH 672 The Role of Physical Activity in the Etiology, Treatment and Prevention of Chronic Disease (biennial) \*
- EEH 673 Molecular Epidemiology (biennial) \*
- EEH 674 Fundamentals of Genetic Epidemiology (biennial) \*

\* This course is designed for advanced doctoral students.

Note: Check current class schedule for course offerings (frequency and semester).

CREDITS FOR REQUIRED EPIDEMIOLOGY PHD ELECTIVE COURSES = 12 CREDITS



### Graduate Seminar

- EEH 591 Graduate Seminar (0 Credits)

The graduate seminar is an opportunity to hear about epidemiologic research from researchers from the department and school as well as from outside researchers. The seminars are an important complement to coursework for building an understanding of research methods and applications.

EEH 591 Graduate Seminar is a required course for:

- All full-time students
- All students who are certified full-time
- All full and part-time students who have completed their course work and are registered for a minimum of one credit hour of Dissertation Guidance.

Students are required to register for and attend the weekly departmental seminars. The course will be assigned an 'S/U' grade. Students are allowed two unexcused absences per semester. An additional absence beyond the two may be granted ONLY for extenuating circumstances and requires the permission of the MS/PhD Graduate Director prior to the seminar.

For students who have successfully defended their proposal AND filed their ATC (with abstract) BEFORE the start of the semester, a minimum of 50 percent attendance at the seminars is required for each semester until degree completion.

Part-time students are strongly encouraged to attend the seminars.

CREDITS FOR REQUIRED GRADUATE SEMINAR = 0 CREDITS

### Ethics Course/Responsible Conduct of Research (RCR) Training

Doctoral students must receive formal training in the Responsible Conduct of Research. All PhD students are required to take and pass the following online course.

- Collaborative Institutional Training Initiative (CITI) online course (score of 80% or higher) (0 credits)

Students may also take the following course in addition to CITI.

- RPG 504 Responsible Conduct of Research (1 credit)

Students are required to document successful completion of their training when they submit their **Application to Candidacy (ATC)** (see section on Application to Candidacy).

CREDITS FOR REQUIRED ETHICS COURSE = 0 to 1 CREDIT

### **Recommended Options to Fulfill the Balance of Remaining Credit Hours**

REMAINING BALANCE OF CREDITS = 29 to 30 CREDITS – DEPENDING ON CREDITS TAKEN FOR THE ETHICS COURSE

The remaining 29 to 30 credits are tailored to the trainee's particular interests and needs, and are planned in consultation with the faculty advisor. Elective courses taken outside the following departments must first be reviewed with the faculty advisor and approved by the MS/PhD Graduate Director: EEH, Biostatistics, Community Health and Health Behavior, Roswell Park (RP) Natural Sciences, or RP Cancer Prevention and Control.

It is strongly recommended that PhD students register for EEH 510, and engage in Independent Study and/or Directed Research (shown below). Students should register for EEH 700 Dissertation Guidance while working on their dissertations once they have successfully defended their proposal.

Strongly Recommended

- EEH 510 Principles of Measurement in Public Health (3 credits)
- EEH 697 Independent Study PhD (1-9 credits)
  - For students with special interests not satisfied through the formal course work, there is an opportunity to pursue independent study under the direction of a faculty member. With permission of the instructor, students may take EEH 697 Independent Study PhD for up to 9 credits (no more than 6 credits per semester)
- EEH 698 Directed Research (1-15 credits)
  - Students can engage in directed research under the mentorship of a faculty member. It is suggested that PhD students register for Directed Research when working on writing their dissertation proposals. With permission of the instructor, students may take EEH 698 Directed Research for up to 15 credits (no more than 6 credits per semester).

Register while working on Dissertation

- EEH 700 Dissertation Guidance (1 to 12 credits)
  - Student should register for this while working on their dissertations. Students may take up to 12 credits in Dissertation Guidance (no more than 10 credits per semester).

**Graduate Seminar Requirement**

Doctoral students are required to present at least one departmental seminar while in the final stages of their data analysis and PRIOR to scheduling their dissertation defense.

- EEH 591 Graduate Seminar (0 credits)

Departmental Seminar Checklist:

- ✓ Present a departmental seminar prior to scheduling the dissertation defense

NOTE: The proposal must be successfully defended and the ATC must be submitted BEFORE the start of the semester for the 50% attendance rule to apply

**EEH Work in Progress (WIP) Group**

Doctoral students are strongly encouraged to attend and present at the EEH WIP, schedule permitting.

The purpose of the EEH WIP is to learn about current student and faculty research within our department and provide a venue to receive and give constructive feedback on ongoing work. EEH WIP provides a weekly opportunity during the fall and spring semesters for EEH researchers to present new hypotheses, ongoing research and manuscripts in development. We encourage all students (MPH, MS, and PhD), postdoctoral fellows, and faculty to participate.

The following types of topics can be presented: 1) discuss a proposal for a planned study or analysis, 2) data on an ongoing analysis, or 3) practice a talk on a completed project. WIP is not a journal club. Work presented by a student or postdoctoral fellow should be reviewed and agreed on by the faculty advisor with whom the student is working. It is strongly suggested that the advisor be invited to the WIP for discussions of research supervised by that individual.

EEH WIP is not a formal EEH course.

**Recommended PhD Course Sequence**

(Course offerings may change and some courses are offered biennially; actual program tailored to student)

<b>PHD IN EPIDEMIOLOGY (72 credits)</b>	
<b>Year 1: Fall Semester</b>	<b>Year 1: Spring Semester</b>
CHB 550 Public Health and Population Wellbeing (3) EEH 501 Principles of Epidemiology (4) EEH 505 Application of Biostatistics to Epidemiology I (1) EEH 510 Principles of Measurement in Public Health (3) (strongly recommended) EEH 591 Graduate Seminar (0) STA 527 (LEC) Introduction to Biostatistics I (3) STA 527 (REC) Introduction to Biostatistics I (1)	EEH 502 Advanced Methodology (3) EEH 506 Application of Biostatistics to Epidemiology II (4) EEH 591 Graduate Seminar (0)  Complete CITI training (0)  <u>6 Credits from any of the following:</u> Required advanced statistics course (3) Epidemiology elective course(s) (3-6) EEH 697 Independent Study PhD (1-3)* EEH 698 Directed Research (1-3)*
Total credits=15	Total credits=13
<b>Year 1: End of Spring Semester</b>	
Comprehensive exam (in May after Spring semester)	
<b>Year 2: Fall Semester</b>	<b>Year 2: Spring Semester</b>
EEH 591 Graduate Seminar (0) EEH 601 Advanced Epidemiologic Study Designs (3)  <u>9 Credits from any of the following:</u> Required advanced statistics course (3) Epidemiology elective course(s) (3 - 6) EEH 697 Independent Study PhD (1- 6)* EEH 698 Directed Research (1- 6)*	EEH 591 Graduate Seminar (0) EEH 611 Analysis of Health Data (4)  <u>9 Credits from any of the following:</u> Required advanced statistics course (3) Epidemiology elective course(s) (3 - 6) EEH 697 Independent Study PhD (1- 6)* EEH 698 Directed Research (1- 6)*
Total credits=12	Total credits=13
<b>Year 2: Summer</b>	
Preliminary exam (Summer of second year) – see requirements to sit for preliminary exams	
<b>Year 3: Fall Semester</b>	<b>Year 3: Spring Semester</b>
EEH 591 Graduate Seminar (0)  <u>Balance of Credit Hours:</u> EEH 698 Directed Research (6)*  Preparation of dissertation proposal	EEH 591 Graduate Seminar (0)  <u>Balance of Credit Hours:</u> EEH 698 Directed Research (6)*  Preparation of dissertation proposal, defense of dissertation proposal and specialty prelim exam
Total credits=6	Total credits=6
<b>Year 3: Summer</b>	
Specialty exam and proposal defense (During the third year or during the summer of third year)	

Year 4: Fall Semester	Year 4: Spring Semester
EEH 591 Graduate Seminar (0)  <u>Balance of Credit Hours:</u> EEH 700 Dissertation Guidance (4)**   <div style="text-align: right;">Total credits=4</div>	EEH 591 Graduate Seminar (0)  <u>Balance of Credit Hours:</u> EEH 700 Dissertation Guidance (3)**  Dissertation defense   <div style="text-align: right;">Total credits=3</div>

\*Even though a student can register for **EEH 697, Independent Study PhD** for up to 9 credits and for **EEH 698, Directed Research** for up to 15 credits, please note that only 6 credits per semester are allowed for each of these courses.

\*\***EEH 700, Dissertation Guidance:** Students may take up to 12 credits (no more than 10 credits per semester). A minimum of 1 credit hour must be taken.

**NOTE:** A student with a MS degree in epidemiology may be able to complete the PhD degree more quickly because they will have taken a number of the required courses for their MS. A maximum of 36 credit hours acquired in a relevant master's degree program may be transferred to the PhD.

# **PHD DEGREE REQUIREMENTS - MULTIDISCIPLINARY TRAINING PROGRAM IN CANCER EPIDEMIOLOGY**

Within the PhD program, we offer a cancer epidemiology track for students wishing to focus on interdisciplinary research in this critical area. The requirements for the cancer epidemiology track are the same as those for the PhD generally. Several of the electives are specified to provide in-depth knowledge of cancer biology and epidemiology.

Completion of the cancer epidemiology track prepares the student for a career in this rapidly changing field, providing advanced skills in epidemiologic methods integrated with an understanding of the biology of cancer. Partnering UB's Department of Epidemiology and Environmental Health with the Roswell Park Comprehensive Cancer Center, the program provides tailored, hands-on opportunities to develop research skills in cancer epidemiology and control as well as in other related disciplines. Students also gain an understanding of and experience in interdisciplinary research.

## ***Required Courses for Epidemiology PhD – Cancer Epidemiology Track***

### *Principles and Methods of Epidemiology Core Courses*

- EEH 501 Principles of Epidemiology (4 credits)
- EEH 502 Advanced Methodology (3 credits)
- EEH 510 Principles of Measurement in Public Health (3 credits)
- EEH 601 Advanced Epidemiologic Study Designs (3 credits) \*

### *Statistical Methods Core Courses*

- EEH 505 Application of Biostatistics to Epidemiology I (1 credits)
- EEH 506 Application of Biostatistics to Epidemiology II (4 credits)
- EEH 611 Analysis of Health Data (4 credits) \*
- STA 527 (LEC) Introduction to Biostatistics I (3)
- STA 527 (REC) Introduction to Biostatistics I (1)
- One advanced statistics course outside of the department such as:
  - NUS 695 Advanced Statistical Techniques (3 credits)
  - STA 503 Regression Analysis (3 credits)
  - STA 517 Categorical Data Analysis (3 credits)
  - STA 545, 546 Statistical Data Mining I, II (3 credits each)
  - STA 575 Survival Analysis (3 credits)

### *Public Health Core Course*

- CHB 550 Public Health and Population Wellbeing (3 credits)

### *PhD Dissertation Guidance*

- EEH 700 Dissertation Guidance (a minimum of 1 credit required)

\* This course is designed for advanced doctoral students.

CREDITS FOR REQUIRED CORE COURSES FOR EPIDEMIOLOGY PHD IN CANCER TRACK = 33 CREDITS

### *Additional Required Courses for Epidemiology PhD – Cancer Epidemiology Track*

*(Course offerings at Roswell Park are under revision. There will likely be some changes in requirements. Please see Dr. Freudenheim for information regarding these requirements.)*

- EEH 570 Cancer Epidemiology (annual) (3 credits)
- EEH 670 Advanced Cancer Epidemiology and Prevention (biennial) (3 credits) \*
- EEH 673 Molecular Epidemiology (biennial) (3 credits)\*
- RPG 510 Cancer Pathology (3 credits)
- RPN 530 Oncology for Scientists I (4 credits)
- RPN 532 Oncology for Scientists II (4 credits)

CREDITS FOR ADDITIONAL REQUIRED COURSES FOR EPIDEMIOLOGY PHD IN CANCER TRACK = 20 CREDITS

Elective Courses for Epidemiology PhD – Cancer Epidemiology Track

Take one additional advanced epidemiology course from list below (all courses are 3 credits):

- EEH 571 Epidemiology of Cardiovascular Disease (annual)
- EEH 572 Nutritional Epidemiology (biennial)
- EEH 573 Epidemiology of Infectious Diseases (annual)
- EEH 574 Epidemics and Outbreaks (biennial)
- EEH 575 Epidemiologic Applications to Environmental Health (biennial)
- EEH 577 Perinatal Epidemiology (biennial)
- EEH 610 Fundamentals of Grant Development (annual) \*
- EEH 672 The Role of Physical Activity in the Etiology, Treatment and Prevention of Chronic Disease (biennial) \*
- EEH 674 Fundamentals of Genetic Epidemiology (biennial) \*

\* This course is designed for advanced doctoral students.

Note: Check current class schedule for course offerings (frequency and semester).

CREDITS FOR ELECTIVE COURSES FOR EPIDEMIOLOGY PHD IN CANCER EPIDEMIOLOGY TRACK = 3 CREDITS

Ethics Course/Responsible Conduct of Research (RCR) Training

Doctoral students must receive formal training in the Responsible Conduct of Research. All PhD students are required to take and pass the following online course.

- Collaborative Institutional Training Initiative (CITI) online course (score of 80% or higher) (0 credits)

Students in the cancer training track are also required to take the following course in addition to CITI.

- RPG 504 Responsible Conduct of Research (1 credit)

Students are required to document successful completion of their training when they submit their **Application to Candidacy (ATC)** (see section on Application to Candidacy).

CREDITS FOR REQUIRED ETHICS COURSE = 1 CREDIT

Graduate Seminar

- EEH 591 Graduate Seminar (0 Credits)

The graduate seminar is an opportunity to hear about epidemiologic research both from the department and school as well as from outside researchers. The seminars are an important complement to coursework for building an understanding of research methods and applications.

EEH 591 Graduate Seminar is a required course for:

- All full-time students
- All students who are certified full-time
- All full and part-time students who have completed their course work and are registered for a minimum of one credit hour of Dissertation Guidance.

Students are required to register for and attend the weekly departmental seminars. The course will be assigned an 'S/U' grade. Students are allowed two unexcused absences per semester. An additional absence beyond the two may be granted ONLY for extenuating circumstances and requires the permission of the MS/PhD Graduate Director Studies prior to the seminar.

For students who have successfully defended their proposal AND filed their ATC (with abstract) BEFORE the start of the semester, a minimum of 50 percent attendance at the seminars is required for each semester until degree completion.

Part-time students are strongly encouraged to attend the seminars.

CREDITS FOR REQUIRED GRADUATE SEMINAR = 0 CREDITS

### **Additional Seminars**

Doctoral students in the cancer track are strongly encouraged to attend additional seminars and research discussions on cancer, schedule permitting. These include the following

- **Cancer Prevention Grand Rounds:** Mondays, 11:30 a.m. to 12:30 p.m., Gaylord Cary Meeting Room (or as otherwise specified), Research Studies Center, RPCCC.
- **Cancer Prevention Works in Progress:** every 2 weeks on Tuesdays, 10-11AM. Meet with faculty to discuss ongoing and planned research in cancer prevention.
- **RPCCC Epidemiology Journal Club:** every 2 weeks on Tuesdays, 10-11AM. Meet with faculty to discuss published research in cancer epidemiology, focusing on epidemiologic methods and cancer biology papers.
- **EEH Work in Progress (WIP) Group**  
Doctoral students are strongly encouraged to attend and present at the EEH WIP, schedule permitting.

The purpose of the EEH WIP is to learn about current student and faculty research within our department and provide a venue to receive and give constructive feedback on ongoing work. EEH WIP provides a weekly opportunity during the fall and spring semesters for EEH researchers to present new hypotheses, ongoing research and manuscripts in development. We encourage all students (MPH, MS, and PhD), postdoctoral fellows, and faculty to participate.

The following types of topics can be presented: 1) discuss a proposal for a planned study or analysis, 2) data on an ongoing analysis, or 3) practice a talk on a completed project. WIP is not a journal club. Work presented by a student or postdoctoral fellow should be reviewed and agreed on by the faculty advisor with whom the student is working. It is strongly suggested that the advisor be invited to the WIP for discussions of research supervised by that individual.

EEH WIP is not a formal EEH course.

### ***Recommended Options to Fulfill the Balance of Remaining Credit Hours***

REMAINING BALANCE OF CREDITS = 15 CREDITS

The remaining 15 credits are tailored to the trainee's particular interests and needs, and are planned in consultation with the faculty advisor. Elective courses taken outside the following departments must first be reviewed with the faculty advisor and approved by the MS/PhD Graduate Director: EEH, Biostatistics, Community Health and Health Behavior; and RPCCC Natural Sciences, and Cancer Prevention and Control.

It is strongly recommended that PhD students engage in Independent Study and/or Directed Research (shown below). Students should register for EEH 700 Dissertation Guidance while working on their dissertations once they have successfully defended their proposal.

#### **Strongly Recommended**

- EEH 697 Independent Study PhD (1-9 credits).
  - For students with special interests not satisfied through the formal course work, there is an opportunity to pursue independent study under the direction of a faculty member. With permission of the instructor, students may take EEH 697 Independent Study PhD for up to 9 credits (no more than 6 credits per semester).
- EEH 698 Directed Research (1-15 credits).
  - Students can engage in directed research under the mentorship of a faculty member. It is suggested that PhD students register for Directed Research when working on writing their dissertation proposals. With permission of the instructor, students may take EEH 698 Directed Research for up to 15 credits (no more than 6 credits per semester).

Register while working on Dissertation

- EEH 700 Dissertation Guidance (1 to 12 credits)
  - Student should register for this while working on their dissertations Students may take up to 12 credits in Dissertation Guidance (not more than 10 credits per semester).

**Graduate Seminar Requirement**

Doctoral students are required to present at least one departmental seminar while in the final stages of their data analysis and PRIOR to scheduling their dissertation defense.

- EEH 591 Graduate Seminar (0 credits).

Departmental Seminar Checklist:

- ✓ Present a departmental seminar prior to scheduling the dissertation defense

NOTE: The proposal must be successfully defended and the ATC must be submitted BEFORE the start of the semester for the 50% attendance rule to apply

**Fellowships**

Fellowships funded by an NCI T32 training grant are available for qualified students in the cancer epidemiology track within the PhD program. Fellows receive a stipend and funds for tuition, as well as some funding for research. Applications to the training program are generally made before or during the first year in the doctoral program.

Learn more about UB's cancer epidemiology fellowships by contacting Jo Freudenheim ([jfreuden@buffalo.edu](mailto:jfreuden@buffalo.edu)) or Terri Raimondo at [traimond@buffalo.edu](mailto:traimond@buffalo.edu) or 716-829-5363.



**Recommended PhD Multidisciplinary Training Program in Cancer Epidemiology Course Sequence**  
 (Course offerings may change and some courses are offered biennially; actual program tailored to student)

<b>PHD MULTIDISCIPLINARY TRAINING PROGRAM IN CANCER EPIDEMIOLOGY (72 credits)</b>	
<b>Year 1: Fall Semester</b>	<b>Year 1: Spring Semester</b>
CHB 550 Public Health and Population Wellbeing (3) EEH 501 Principles of Epidemiology (4) EEH 505 Application of Biostatistics to Epidemiology I (1) EEH 510 Principles of Measurement in Public Health (3) EEH 591 Graduate Seminar (0) STA 527 (LEC) Introduction to Biostatistics I (3) STA 527 (REC) Introduction to Biostatistics I (1)  EEH WIP, RPCCC Journal Club/WIP, RPCCC grand rounds  Total credits=15	EEH 502 Advanced Methodology (3) EEH 506 Application of Biostatistics to Epidemiology II (4) EEH 570 Cancer Epidemiology (3) EEH 591 Graduate Seminar (0)  Complete CITI training (0)  EEH 697 Independent Study PhD (2)* or EEH 698 Directed Research (2)*  EEH WIP, RPCCC Journal Club/WIP, RPCCC grand rounds  Total credits=12
<b>Year 1: End of Spring Semester</b>	
Comprehensive exam (in May after Spring semester)	
<b>Year 2: Fall Semester</b>	<b>Year 2: Spring Semester</b>
EEH 591 Graduate Seminar (0) EEH 601 Advanced Epidemiologic Study Designs (3) EEH 673 Molecular Epidemiology (3) (biennial) RPG 504 Ethics and Conduct of Research (1) RPN 530 Oncology for Scientists I (4) STA 545 Statistical Data Mining I (3)  EEH WIP, RPCCC Journal Club/WIP, RPCCC grand rounds  Total credits=14	EEH 591 Graduate Seminar (0) EEH 611 Analysis of Health Data (4) EEH 672 The Role of Physical Activity in the Etiology, Treatment and Prevention of Chronic Disease (3) (biennial) RPG 510 Cancer Pathology (3) RPN 532 Oncology for Scientists II (4)  EEH WIP, RPCCC Journal Club/WIP, RPCCC grand rounds  Total credits=14
<b>Year 2: Summer</b>	
Preliminary exam (Summer of second year) – see requirements to sit for preliminary exams	
<b>Year 3: Fall Semester</b>	<b>Year 3: Spring Semester</b>
EEH 591 Graduate Seminar (0)  <u>Balance of Credit Hours:</u> EEH 698 Directed Research (6)*  Preparation of dissertation proposal  EEH WIP, RPCCC Journal Club/WIP, RPCCC grand rounds  Total credits=6	EEH 591 Graduate Seminar (0) EEH 670 Advanced Cancer Epidemiology and Prevention (3) (biennial)  <u>Balance of Credit Hours:</u> EEH 698 Directed Research (3)*  Preparation of dissertation proposal, defense of dissertation proposal and specialty prelim exam  EEH WIP, RPCCC Journal Club/WIP, RPCCC grand rounds  Total credits=6
<b>Year 3: Summer</b>	
Specialty exam and proposal defense (During the third year or during the summer of third year)	

Year 4: Fall Semester	Year 4: Spring Semester
EEH 591 Graduate Seminar (0)	EEH 591 Graduate Seminar (0)
<u>Balance of Credit Hours:</u> EEH 700 Dissertation Guidance (3)**	<u>Balance of Credit Hours:</u> EEH 700 Dissertation Guidance (2)**
EEH WIP, RPCCC Journal Club, RPCCC grand rounds	EEH WIP, RPCCC Journal Club, RPCCC grand rounds
Total credits=3	Dissertation defense Total credits=2

\*Even though a student can register for **EEH 697, Independent Study PhD** for up to 9 credits and for **EEH 698, Directed Research** for up to 15 credits. Please note that only 6 credits per semester are allowed for each of these courses.

\*\***EEH 700, Dissertation Guidance:** Students may take up to 12 credits (no more than 10 credits per semester). A minimum of 1 credit hour must be taken.

**NOTE:** A student with a MS degree in epidemiology may be able to complete the PhD degree more quickly because they will have taken a number of the required courses for their MS. A maximum of 36 credit hours acquired in a relevant master's degree program may be transferred to the PhD.

## **DEGREE REQUIREMENTS - MD/PHD MEDICAL SCIENTIST TRAINING PROGRAM (MSTP)**

Earn two degrees, an MD from UB's Jacobs School of Medicine and Biomedical Sciences and a PhD in epidemiology in less time and fewer credits than each individually with this collaborative program.

Through the Medical Scientist Training Program (MSTP), students earn both degrees through a single, well-integrated curriculum focused on preparation for work as a clinical translational scientist.

On average, the program takes seven-eight years to complete, four years for the MD component and three-four years for the PhD component. 72 credit hours are required for the PhD.

An MD/PhD student first completes two years of medical school. After year 2 of medical school, they start the PhD program curriculum. In the first two years of the PhD program, students take the MSTP Research Seminar, a course that integrates clinical and research training. Distinguished university faculty present biweekly seminars on current advances in basic and clinical research across the biological and medical disciplines, and students participate weekly in a supervised clinical experience.

Following the first two years of the MD component, students complete the requirements for the doctorate, which takes three to four years and includes:

- Completion of coursework in epidemiology and statistics
- Completion of advanced coursework in selected basic science disciplines as appropriate
- Weekly Grand Rounds in the clinical program of choice or clinical alternative
- MSTP research seminars
- EEH seminars
- PhD dissertation research

Students meet all requirements of the UB Graduate School for completion of the PhD in epidemiology (see PhD requirements). Afterwards, they then return to the medical school's standard third and fourth year curriculum to complete their medical education, with the MSTP Research Seminar integrated with the remaining courses.

### ***Potential Courses to be Transferred (Medical School, Years 1 and 2)***

A Student can transfer up to 21 credits from the medical school curriculum towards their PhD from the list below.

- IMC 500 Medicine and Society (2 credits)
- IMC 514 Musculoskeletal (4 credits)
- IMC 516 Fundamentals III/Hematology (includes immunology) (5 credits)
- IMC 602 Cardiovascular System (8 credits)
- IMC 604 Lung and Respiration (8 credits)
- IMC 612 Endocrine and Reproductive (8 credits)

### ***Strongly Recommended Epidemiology Electives for MSTP***

In addition to the required fundamental classes in epidemiology and statistics, four epidemiology elective courses are required.

- EEH 570 Cancer Epidemiology (annual)
- EEH 571 Epidemiology of Cardiovascular Disease (annual)
- EEH 573 Epidemiology of Infectious Diseases (annual)
- EEH 610 Fundamentals of Grant Development (annual)\*
- EEH 672 The Role of Physical Activity in the Etiology, Treatment and Prevention of Chronic Disease (biennial)\*
- EEH 673 Molecular Epidemiology (biennial)\*
- EEH 674 Fundamentals of Genetic Epidemiology (biennial)\*

\* This course is designed for advanced doctoral students.

Note: Check current class schedule for course offerings (frequency and semester). All courses are 3 credits.

**Recommended PhD in Epidemiology – MSTP Track - Course Sequence**

(Course offerings may change and some courses are offered biennially; actual program tailored to student)

<b>MEDICAL SCHOOL YEAR 1</b>	
<b>MEDICAL SCHOOL YEAR 2</b>	
<b>PHD IN EPIDEMIOLOGY STARTS AFTER 2 YEARS OF MEDICAL SCHOOL – MSTP TRACK (72 credits)</b>	
<b>PhD Year 1 : Fall Semester</b>	<b>PhD Year 1: Spring Semester</b>
CHB 550 Public Health and Population Well Being (3) or EEH 510 (see below in grid) EEH 501 Principles of Epidemiology (4) EEH 505 Application of Biostatistics to Epidemiology I (1) EEH 510 Principles of Measurement in Public Health (3) or CHB 550 (see above in grid) EEH 591 Graduate Seminar (0) MST 601 MSTP Seminar (1) (required each semester) STA 527 (LEC) Introduction to Biostatistics I (3) STA 527 (REC) Introduction to Biostatistics I (1)	EEH 502 Advanced Methodology (3) EEH 506 Application of Biostatistics to Epidemiology II (4) EEH 591 Graduate Seminar (0)  <u>3 Credits from any of the following:</u> Required advanced statistics course (3) Epidemiology elective course (3) EEH 697 Independent Study PhD (3)* EEH 698 Directed Research (3)*  Complete CITI training (0)  MST 601 MSTP Seminar (1)
Total credits=13	Total credits=11
<b>PhD Year 1: End of Spring Semester</b>	
Comprehensive exam (in May after Spring semester)	
<b>PhD Year 2: Fall Semester</b>	<b>PhD Year 2: Spring Semester</b>
EEH 591 Graduate Seminar (0) EEH 601 Advanced Epidemiologic Study Designs (3)  <u>6 Credits from any of the following:</u> Required advanced statistics course (3) Epidemiology elective course(s) (3 to 6) EEH 697 Independent Study PhD (1 to 6)* EEH 698 Directed Research (1 to 6)*  MST 601 MSTP Seminar (1)  Begin preparation of dissertation proposal	EEH 591 Graduate Seminar (0) EEH 611 Analysis of Health Data (4)  <u>6 Credits from any of the following:</u> Required advanced statistics course (3) Epidemiology elective course(s) (3 to 6) EEH 697 Independent Study PhD (1 to 6)* EEH 698 Directed Research (1 to 6)*  MST 601 MSTP Seminar (1)  Continued preparation of dissertation proposal
Total credits=10	Total credits=11

<b>PhD Year 2: Summer</b>	
Preliminary exam (Summer of second year) – see requirements to sit for preliminary exams.	
<b>NOTE:</b> PhD students need 48 credits to sit for the PhD in epidemiology prelim, which includes certain specific required courses (see details in the handbook section titled “Additional Degree Requirements Relevant to all PhD Tracks”). For an MSTP PhD student, 45 credits would come from the noted courses in the grid above. An additional 21 course credits would be transferred from the student’s medical school coursework to the PhD degree, so that a student would reach at least 45 credits by the end of year 2, but more likely an estimated 45 + 21 = 66 credits completed.	
<b>PhD Year 3: Fall Semester</b>	<b>PhD Year 3:Spring Semester</b>
EEH 591 Graduate Seminar (0)	EEH 591 Graduate Seminar (0)
<u>Balance of Credit Hours:</u> EEH 698 Directed Research (3)*	<u>Balance of Credit Hours:</u> EEH 700 Dissertation Guidance (1)**
Finalizing dissertation proposal, defense of dissertation proposal and specialty prelim exam	MST 601 MSTP Seminar (1)
MST 601 MSTP Seminar (1)	Dissertation defense
Total credits=4	Total credits=2
<b>MEDICAL SCHOOL YEAR 3</b>	
<b>MEDICAL SCHOOL YEAR 4</b>	

\*Even though a student can register for **EEH 697, Independent Study PhD** for up to 9 credits and for **EEH 698, Directed Research** for up to 15 credits. Please note that only 6 credits per semester are allowed for each of these courses.

\*\***EEH 700, Dissertation Guidance:** Students may take up to 12 credits (no more than 10 credits per semester). A minimum of 1 credit hour must be taken.

**Note:** The Comprehensive Examination (see details below) should be successfully completed at the end of Year 1. The Preliminary Examination is taken at the end of Year 2 (see details below). A maximum of 36 credit hours acquired in a relevant master’s degree program may be transferred to the PhD.

## ADDITIONAL DEGREE REQUIREMENTS RELEVANT TO ALL PHD TRACKS

### ***Comprehensive Examination***

Successful completion of a written, in-class Comprehensive Exam is required for all PhD students. The purpose of the exam is to assess mastery of basic epidemiological concepts and the ability to integrate those concepts. The exam must be taken at the end of the academic year immediately following successful completion ('B' or better) of the core required courses or the equivalent: EEH 501, EEH 502, EEH 505, EEH 506, and STA 527.

- Full-time students must take the exam after the first year of classes.
- Part-time students must take the exam by the Spring semester immediately following completion of the required courses (see above).
- Re-entering students must take the exam after their first year of re-entering the program or, if preferred, prior to re-entering.

The exam will be given 2-3 weeks after the end of the Spring semester (date to be announced).

- All students who have completed the necessary courses (see above) must take this exam on the date scheduled. **There are no exceptions.**
- Missing the exam for any reason requires documentation. Legitimate excuses for absence at the exam include: religious observance, illness documented by a physician or other appropriate health care professional, conflicts with University sanctioned activities, public emergencies, and documented personal or family emergencies. The student is responsible for notifying the department in writing with as much advance notice as possible. A non-excusable absence is considered a failure.
- Passing the exam is required for continuation in the PhD program. A student failing the exam must re-take it in August of the same year or wait until the following year. Students who opt to take the exam the following year will not be allowed to continue their course work until they successfully pass the exam.
- Grades will be provided approximately two weeks after the exam.

The exam includes any material from these required courses:

- EEH 501 Principles of Epidemiology
  - EEH 502 Advanced Methodology
  - EEH 505 Application of Biostatistics to Epidemiology I
  - EEH 506 Application of Biostatistics to Epidemiology II
  - STA 527 (LEC) Introduction to Biostatistics I
  - STA 527 (REC) Introduction to Biostatistics I
- The exam consists of multiple choice, short written answers, and calculation and interpretation questions. The exam is not open book.
  - The exam lasts a full day exam and is given in two parts.

Students must successfully complete this exam before proceeding with additional coursework.

- Minimum passing grade is 80%
- One makeup exam is allowed during the same summer for students who do not pass the exam on the first attempt.
- Students who fail two attempts will be allowed to complete the requirements for a master's degree.

## General/Analytic Preliminary Exam

**Purpose.** The purpose of the exam is to determine whether the student has sufficient knowledge essential for conducting advanced epidemiology research toward a doctoral degree. Permission of the student's advisor is required in order to sit for the general preliminary exam. Students interested in taking the exam should submit their request in writing to the MS/PhD Graduate Director. Students are expected to sit for the general/analytic prelim at the end of their second year in the doctoral program. In order to delay taking the prelim for one additional year, students need to submit written justification and obtain permission of their major advisor and of the MS/PhD Graduate Director.

### Preliminary Exam Checklist:

- ✓ Receive permission of advisor
- ✓ Notify the MS/PhD Graduate Director in writing

**Exam format.** The examination includes both written and oral components. The exam focuses on general epidemiologic methods, including data analysis and/or interpretation. At least one question focuses on analytic methods. That question could include the analysis of a designated data set and summarizing results of the analysis in data tables, and written text. The remaining questions focus on application of general epidemiologic methods. The written component is usually administered during the summer, with exact dates determined on a yearly basis. Students who pass the written examination then proceed to an oral examination, usually scheduled within a month of being notified that they passed the written component. During the oral examination, there are questions probing the students' answers to the written exam as well as questions of more general nature regarding epidemiologic methods.

**Eligibility.** Epidemiology PhD students are **eligible to sit for the general analytic preliminary exam** after successfully completing (grade of 'B' or better) 48 credit hours toward the doctorate (including all required courses) and before defense of a doctoral dissertation proposal. These courses are listed in the box below. Students must maintain a minimum overall GPA of 3.0 and a minimum grade of B (3.0) **in all required courses** to sit for the exam.

### REQUIRED COURSES

#### *Epidemiologic Methods Courses*

- EEH 501 Principles of Epidemiology (4 credits)
- EEH 502 Advanced Methodology (3 credits)
- EEH 601 Advanced Epidemiologic Study Designs (3 credits)

#### *Statistics Courses*

- EEH 505 Application of Biostatistics to Epidemiology I (1 credit)
- EEH 506 Application of Biostatistics to Epidemiology II (4 credits)
- STA 527 Introduction to Biostatistics I (4 credits)
- One advanced statistics course (minimum of 3 credits)

#### *Analysis of Health-Related Data*

- EEH 611 Analysis of Health Data (4 credits)

#### *Epidemiology Elective Courses*

- Four epidemiology elective courses (12 credits)

#### *Additional School-wide Required Course*

- CHHB 550 Public Health and Population Wellbeing (3 credits)

### ADDITIONAL COURSE WORK

#### *Electives/Independent Study/Directed Research*

- 7 additional credits as Electives and/or Independent Study and/or Directed Research

**This will give students a total of 48 credits**

**Suggested preparation.** In addition to course work, preparation for the preliminary exam should include self-directed independent preparation by the student. Students are strongly encouraged to do independent reading, attend relevant seminars and organize and participate in preliminary exam study sessions with other graduate students who are also

scheduled to take the exam. All students are expected to be actively involved in research throughout their educational experience; research experience will help in successful completion of the exam.

**Next steps following the General/Analytic prelims.** Students are encouraged to complete any additional course credits so that their total credits completed by the end of their third year (the year after they take the General/Analytic prelim exam) in the PhD program equals 60 credits.

No later than one year after passing the General/Analytic prelim exam, students must submit their dissertation proposal to their committee and **initiate the Proposal/Specialty exam process**. Ideally students begin work on their proposal during the second year of the program so that they are able to complete this process as soon as possible. Students who are unable to submit their proposal for the Proposal/Specialty exam within the year after passing the general/analytic prelim must provide a written justification, with permission from their major advisor, to the MS/PhD Graduate Director for approval of an extension.

**Students with an MS in epidemiology from EEH.** Students admitted to the PhD program who were awarded an MS in epidemiology from EEH take the prelim exam *at the end of their first year of doctoral studies*. They must have completed all required course work for the PhD (see the box above), take a minimum of 12 credits in the first year of their doctoral program, and have passed the Comprehensive Exam in order to sit for prelims (the comprehensive exam typically would be taken at the end of the first year of the MS). These students are encouraged to complete 60 credits before sitting for prelims but must complete at minimum the requirements listed above to sit for prelims. Delaying the prelim for one additional year (until the end of the second year in the doctoral program) will require a written justification and permission of the student's major advisor and the MS/PhD Graduate Director.

### ***Dissertation Overview***

Students are required to design and undertake significant hypothesis-driven original independent epidemiological research that includes aims publishable as a minimum of three manuscripts that demonstrate mastery and understanding in one or more overarching content area(s) as reported in a doctoral dissertation. In accordance with the rules of the Graduate School, the dissertation proposal and the completed research must be defended before a three-member committee selected by the candidate with the approval of the department.

### ***Dissertation Committee***

When all formal coursework and the general analytic preliminary exam have been successfully completed, and with the advice of their advisor, the student selects a committee which consists of a major professor who is a member of the UB Graduate Faculty whose primary geographic appointment is in the Department of EEH or Roswell Park Comprehensive Cancer Center (RPCCC) Department of Cancer Prevention and Control and two additional committee members who are also members of the UB Graduate Faculty. A list of eligible members of the Graduate Faculty is available at the Graduate School website. Contact the Graduate Program Coordinator for assistance. Graduate Faculty associate members may not serve as one of the three committee members, but may serve as an additional committee member.

NOTE: geographic is defined as the department or unit of primary paying appointment where full-time professional services and activities are conducted.

All members of the dissertation committee should be involved throughout the design and conduct of the original research project and in the specialty exam/dissertation proposal defense. The student is encouraged to meet frequently with their committee. Faculty who leave UB may remain on a student's committee for up to one year as a committee member but not as major professor. If the major professor is no longer a full-time member of the EEH or RPCCC Cancer Prevention and Control faculty, the major professor must be replaced. However, they may remain on the committee as a member for up to one year. Students can petition the MS/PhD Graduate Director to have the faculty member remain in exceptional circumstances.

BEFORE a student proceeds to the specialty exam/dissertation proposal defense, they must first have their committee approved by the MS/PhD Graduate Director using the ***Dissertation Committee Approval Form***. This form can be found at the link below:

<https://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/dissertation-committee-approval-form.pdf>.

A description of the study hypothesis is also required. If additional expertise is needed, students can include a fourth member on their committee. The fourth member is not required to have a primary geographic, graduate faculty, or UB appointment.



All doctoral students are required to include a biostatistician or methodologist faculty member on their dissertation committee. The biostatistician or methodologist faculty member will be one component of the review of the committee by the MS/PhD Graduate Director.

Dissertation Committee Checklist:

- ✓ Submit the **Dissertation Committee Approval Form** to the MS/PhD Graduate Director

### **Specialty Exam/Dissertation Proposal Defense**

The specialty exam/dissertation proposal defense should be initiated within one year after successful completion of the general/analytic prelim exam, and after the dissertation committee has been approved. *If the student is not able to do so within twelve months, a written justification must be provided to the MS/PhD Graduate Director for approval of an extension.*

BEFORE a student proceeds to the specialty exam/dissertation proposal defense, they must first have their committee approved by the MS/PhD Graduate Director using the **Dissertation Committee Approval Form** (<https://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/dissertation-committee-approval-form.pdf>).

**Proposal.** The student writes a proposal (the equivalent of approximately 15-25 pages, single spaced, with one inch margins), which includes the following sections: specific aims, background and significance, methods, including a detailed analytic plan and mock tables, strengths and limitations, student roles and responsibilities and timeline. The proposal must be approved by all committee members as sufficiently developed for defending before the student moves on to the written exam and proposal defense. Committee approval will be communicated in writing (email is acceptable) to the chair of the committee and then to the MS/PhD Graduate Director. Example proposals may be requested from the Graduate Program Coordinator.

**Written Specialty Exam.** A written exam will be developed by the student's dissertation committee based on the approved written proposal. The exam will be both specific to the student's dissertation project and to the student's general area of research and will include at least three questions. The purpose of the exam is to measure the student's ability to analyze and synthesize information and to determine whether the student has sufficient breadth and depth of knowledge in their specialty area to successfully complete the proposed project.

The exam will be given to the student within two weeks after the written proposal is approved. The student will have two weeks to respond to the questions. The written exam should be scheduled such that it is handed in at least two weeks before the oral exam is held. *The student is allowed to refer to published literature or other relevant resources, which must be appropriately cited.* The student must not discuss the exam with others, including faculty and students.

The committee reviews the written responses before the oral exam and determines whether the answers are sufficient to proceed with the oral defense. The committee reserves the right to postpone the oral if the written responses are not sufficiently developed. In the case when responses are considered inadequate, the student is given feedback as to what is required. The student is given up to one month to revise their responses. The committee then reviews the revised responses and determines if the answers are sufficient to proceed to the oral. If not, the committee is dissolved and the student must identify a revised/new topic and corresponding committee.

**Oral Proposal Defense.** The defense of the proposal and written exam is open to the rest of EEH and other interested people. The purpose of the oral exam is to allow the committee to question the student about their planned dissertation research as well as their written exam, and to provide an opportunity for the student to present the proposed dissertation project to the public. The student is responsible for scheduling a time and date that is convenient for the Committee Members. The student's Major Professor, all committee members, and the MS/PhD Graduate Director must be present. If all committee members cannot be present, a maximum of one member may participate via conference telephone.

A minimum of one week (7 days) notice must be allowed for the public posting of the specialty exam/dissertation proposal defense to the faculty and student listservs.

The MS/PhD Graduate Director must be present at the oral defense. **Students should verify that the Graduate Director is available when they schedule the defense.**

The specialty exam/PhD proposal defense should take approximately two hours. The specialty exam/dissertation proposal defense consists of a 30-minute presentation of the proposed dissertation research followed by approximately 1.5 hours of questions from the student's committee and from others in attendance. The presentation should include the background and rationale, a brief review of the relevant literature, study questions, hypotheses and their significance, study design, including data collection and analytic methods, as well as strengths and limitations. After the question session is completed, the audience is dismissed and just the student and the committee remain. At that point, the student is questioned about their responses on the written specialty exam as well as other questions related to the topic for approximately 50 to 60 minutes more as needed.

The committee meets privately immediately after the exam to determine whether the student passed or failed. If the student passes the oral exam, the committee signs the student's Application to Candidacy (ATC) form. If the student fails the oral exam, they have one more opportunity to pass an oral exam after completing work assigned by the committee to remedy identified deficiencies. The amount of time between exams should not be longer than a month. If performance on the oral exam is sufficiently poor after two attempts, the committee will be dissolved and the student must identify a new topic and corresponding committee. A new committee should be formed within two months. At that time, the committee prepares a timeline for preparation and defense of the proposal and specialty exam. The timeline should be approved by the MS/PhD Graduate Director. Should the student be unable to form a new committee, he or she may be dismissed from the PhD program for failure to make satisfactory progress, as stated by the Graduate School policies.

The **Application to Candidacy** (ATC) and **Abstract of the Proposed Research Form** are signed by the Committee after a successful proposal defense. (See sections on ATC and Abstract of Research).

*Specialty Exam/Dissertation Proposal Defense Checklist:*

- ✓ With approval of the committee, schedule the specialty exam/proposal defense.
- ✓ Reserve a room for the defense through the Graduate Program Coordinator
- ✓ Confirm that the MS/PhD Graduate Director is available at the planned time
- ✓ Formally defend the proposal with the major professor, all committee members, and MS/PhD Graduate Director present
- ✓ Bring the completed **Application to Candidacy Form** and **Abstract of Proposed Research Form** (see section on ATC) to the defense for signature by the committee
- ✓ Submit the completed **Application to Candidacy Form** and **Abstract of Proposed Research Form** to the Graduate Program Coordinator for signature by the MS/PhD Graduate Director

**Abstract of Proposed Research Form**

All students must submit an **Abstract of Proposed Research Form**. Be sure to follow the example format. The abstract form is signed by the committee at the proposal defense and submitted to the graduate coordinator with the ATC (see section on proposal defense and ATC). The Abstract of Proposed Research Form remains in the Department. This form can be found at:

<http://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/abstract-form-ms-and-phd.pdf>

**Application to Candidacy**

The **Application to Candidacy (ATC)** is a document that includes a summary of courses to be applied toward a degree. The filing of this document is required when all formal course work has been completed, and after the student has successfully defended the proposal. The ATC must be presented at the proposal defense for signature by the committee. The ATC form can be found at: <http://grad.buffalo.edu/forms/atc.html>

Once the ATC has been approved, a student is not required to enroll for 12 credit hours (or 9 credit hours if appointed as a graduate, teaching or research assistant) to be considered full-time for tuition assistantship/scholarship, loan deferral or immigrant status. To be certified full-time a student must be registered for a minimum of one credit hour and submit a **Certification of Full-Time Status Form**. (See section on Certification of Full-Time Status). Be sure to refer to the checklist on the following page.

Application to Candidacy Checklist:

- ✓ Complete (type) Parts 1-7.

Part 1: Degree Program: Doctor of Philosophy in Epidemiology

Part 2 and 3: Fill out if applicable

Part 2a: The Department will attach original transcripts for the baccalaureate degree, if required.

Part 4: All courses must be listed in chronological order. If an intended course(s) and/or credit hours change, the student must complete a Change Expected Conferral Date/Amend ATC:  
<http://grad.buffalo.edu/forms/amend-atc.html>

Part 5: If you have taken courses which will not be applied to the PhD degree, attach an unofficial UB transcript and cross out course(s) which will not be applied. Course credits must total 72 (including transferred and future credits).

Part 6: All courses must be listed in chronological order. If transcripts were submitted at the time of application to the program, the Department will attach.

Part 7: THE ATC MUST BE SIGNED! Student signature and signatures of the major professor and committee members are required (the student is responsible for obtaining signatures). Original signatures are required. ATCs submitted without all original signatures will be returned to the student.

NOTE: Name and signatures for the Associate Dean for Academic and Student Affairs and the MS/PhD Graduate Director are completed by the Department.

Submit to the Graduate Program Coordinator for MS/PhD Graduate Director's signature.

- ✓ Include the **Abstract of Proposed Research Form** signed by the committee.
- ✓ If Responsible Conduct of Research (RCR) training was fulfilled by completing the CITI online course, attach a copy of documentation of successful completion.
- ✓ Submit the completed ATC to the department **no later than FOUR weeks before the Graduate School's official deadline.**
- ✓ Department deadlines are:

September 1 for a February degree conferral  
February 1 for a June degree conferral  
June 1 for a September degree conferral

**Read Carefully:** The Application to Candidacy (ATC) form must be submitted to the Department a minimum of FOUR weeks before the Graduate School deadline. This will allow time for it to be reviewed and approved by the MS/PhD Graduate Director and Associate Dean for Academic and Student Affairs before it is forwarded to the Graduate School. Incomplete ATCs will be returned to the student. ATCs received after the Department deadline may result in delay of degree conferral.

### ***Primary Data Collection Requirement***

To complete the PhD in Epidemiology, all PhD students are required to engage in primary data collection. This requirement can be completed at any time during the program. A plan for engaging in primary data collection should be developed in consultation with the academic advisor and approved as adequate by the MS/PhD Graduate Director prior to engaging in said activities.

Data collection can include such experiences as 1) collection of data in the field (field epidemiology), 2) medical record abstraction and/or data entry of crude data from questionnaires or clinical measures, 3) participating in a study as an interviewer/data collector, 4) designing and administering a questionnaire, or 5) measurement of biological specimens (e.g. DNA methylation, serum hormones, etc.).

For students in the MSTP, primary data collection should be completed by the early part of the third year of the doctoral program. If data collection consists of a survey questionnaire mailed to a community population or a questionnaire administered to a well-defined high volume clinic population, then data collection could be completed early in the third year with the rest of the third year devoted to data analysis and writing the dissertation.

### ***Teaching Assistantship Requirement***

PhD students are required to have a Teaching Assistant (TA) experience for a minimum of 10 hours/week for one semester during their doctoral program. It is suggested that this TA-ship occur during the first two 2 years of their program, prior to the prelim exams. Students must list completion of this teaching requirement within their progress reports for review by their academic advisor and the Graduate Director.

### ***Scientific Communications Requirement***

Doctoral students must demonstrate experience in both written and oral communication of scientific research. Starting in the second year in the PhD program, every doctoral student is expected to present primary research that they have been involved in at a minimum of two research events per year, in an oral or poster presentation format. The presentation expectation can be met with research presentations at the EEH WIP, the Perry Poster Day held annually in the spring, or national or international meetings. Each spring, students must indicate their presentations to complete this communications requirement within their progress reports for review by their academic advisor and the Graduate Director. First year students are encouraged to be active participants in the weekly EEH WIP.

### ***Dissertation Defense***

All PhD students must complete and formally defend a dissertation approved by the student's committee. The dissertation must be examined and approved by the major professor, and all committee members. The major professor, all committee members, and the MS/PhD Graduate Director must be present for the final defense. In extenuating circumstances, if all committee members cannot be present, a maximum of one member may participate via conference telephone.

Students should allow a minimum of two weeks for their major professor/committee members to review the final version of the dissertation. The major professor/committee members may set longer time limits if needed. Students should be respectful of faculty's time/workload. Approval of the final version by the full committee is required in order to schedule the defense.

In addition, a minimum of two weeks (14 days) notice must be allowed for the public posting of the defense. A final unbound copy (or electronic version) of the dissertation approved by the student's committee must be on file in the department for review two weeks before defense.

The MS/PhD Graduate Director must be present at the oral defense. The student is responsible for making sure that the Graduate Director is available when the defense is scheduled.

The PhD dissertation defense consists of a 25 to 30-minute presentation followed by approximately 1 to 1.5 hours of questions. The presentation summarizes the dissertation work including background, rationale for the work, study questions and/or hypotheses, methods, results, and conclusions and strengths and limitations. The presentation is followed by questions from the committee and from anyone else in attendance. After the question period, the student is dismissed and the committee comes to a consensus as to whether or not the student passed and if anything additional, with respect to the dissertation, needs to be addressed prior to completion of the degree. The student is admitted back to the room and the committee decision (with a possible request for items to be addressed) is communicated to the student.

#### ***Dissertation Defense Checklist:***

- ✓ Present a departmental seminar while in final stages of data analysis
- ✓ When approval from the full committee is received, schedule an oral defense of the dissertation:
  - Confirm date with committee and the MS/PhD Graduate Director
  - Confirm availability of room
- ✓ Provide the Department with an approved final copy of the dissertation. NOTE: the dissertation should be bound AFTER the defense in the event the Committee requires minor revisions as a result of the defense.
- ✓ Notify the Graduate Program Coordinator of the defense date and title of the dissertation
- ✓ A room will be reserved and a public notice will be posted for the defense. A minimum of 14 days' notice must be allowed for the posting of the defense. A copy of the prepared ***M-Form*** and ***Graduation Information Form*** will be prepared and placed in the student's mailbox (see section on ***M-Form***).

### ***M-Form***

The ***M-form*** (Master's Degrees with Thesis and all PhD Degrees) is prepared by the Graduate Program Coordinator and brought by the student to the defense. This form must be signed by the Major Professor and all Committee Members at the defense certifying the student has successfully defended their dissertation. If, as a result of the defense, revisions to the dissertation are required, the major professor retains the form and signs Section 3 only after the revisions have been examined and approved by all committee members. Signature of the MS/PhD Graduate Director is also required. The completed ***M-Form*** is submitted to the Graduate Program Coordinator allowing enough time for it to be received at the Graduate School by the official deadline posted on the Graduate School website at: <http://grad.buffalo.edu/forms/m-form-thesis.html>

NOTE: The M-Form will not be forwarded to the Graduate School until a bound copy of the dissertation is submitted to the Department. In exceptional cases, the department may accept a bindery receipt in lieu of the bound copy.

*M-Form Checklist:*

- ✓ Present the **M-Form** at the dissertation defense for signature of the Committee and MS/PhD Graduate Director
- ✓ Submit the **M-Form** and **Graduation Information Form** to the Graduate Program Coordinator
- ✓ Submit bound copy of the dissertation
- ✓ Submit electronic dissertation to Graduate School (see below)

**Graduation Information Form**

The **Graduation Information Form** should be completed and brought to the dissertation defense. A copy of the form will be provided at the time of the defense. The form is available at the following link:

<http://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/graduation-information-form.pdf>

**Submission of the Dissertation**

The Graduate School requires an electronic submission of the dissertation. Electronic submission can be made at <http://grad.buffalo.edu/succeed/graduate/electronic-submission.html>. Guidelines for submission and relevant deadlines can be found on the website.

The Department requires one bound copy of the dissertation. At least two weeks should be allowed for binding the final copy. Copies should be bound in boards covered with black imitation leather, with the title and author's name embossed, not printed, on the front in gold and the author's last name, degree and year of conferral of the degree on the spine (also in gold). Students should inquire whether or not their major professor and each committee member desires a bound copy prior to ordering one. Some faculty members may not wish to receive a bound copy. Ordering of bound copies for committee members is the responsibility of the student.

Doctoral students should also complete the **(Required)** Doctoral Degree Recipients Survey at <http://grad.buffalo.edu/succeed/graduate/surveys.html>

Students should also consider the benefits of copyrighting their dissertation (not required). <http://grad.buffalo.edu/study/graduate/etd.html>

**Guidelines for the Dissertation Document**

Several style manuals are available, including

- American Psychological Association. <http://www.apastyle.org/>
- Modern Language Association. <http://www.mla.org/>
- University of Chicago, Chicago Manual of Style. <http://www.chicagomanualofstyle.org/>

These sites provide information on a host of questions regarding the technical aspects of preparing the thesis or dissertation. Copies of completed dissertations are available for reference in the Department or online at the Health Sciences Library.

### **Research and Professional Conduct**

The diversity of faculty interest areas allows for many opportunities for research. All graduate students are expected to be actively involved in research throughout their educational experience. The University and department hold standards for professional conduct (see Warning on Plagiarism).

### **Abstract Submission to Professional Meetings**

Students intending to submit abstracts to professional meetings must obtain written approval from their advisor PRIOR to submission. All abstracts must include a full citation of authorship.

### **Time Limit to Complete the Degree**

The time limit for completing the PhD degree is SEVEN years from the date of first registration in the degree program, not including official leaves of absence, regardless of full- or part-time status. It is expected that students take seven years only in exceptional cases. It is expected that students complete their degree within three to five years.

### **Extension of Time to Complete the Degree**

Students unable to complete the PhD program within the time limit must petition the Graduate School for an extension of time to complete the degree provided there exists adequate reason to justify such a request. The Graduate School will not approve an extension for 'personal reasons,' the request must be specific and present strong justification for the request. Students must provide a detailed description of work completed to date, a detailed month-to-month timeline for completion of the dissertation/degree, and a written endorsement from the advisor/major professor. Requests for extensions should be made at least two weeks prior to the start of the semester. The **Petition for an Extension of the Time Limit to Complete a Graduate Degree Program** is available at the following link: <http://grad.buffalo.edu/forms/extension.html>

#### Extension of Time Checklist:

- ✓ Complete **Petition for an Extension of the Time Limit to Complete a Graduate Degree Program**
- ✓ Be sure to sign form
- ✓ Obtain signature of advisor/major professor
- ✓ Attach written statement indicating
  - Cause of the delay
  - Detailed description of work completed thus far
  - Detailed month-to-month plan of work to be completed
- ✓ Attach written endorsement from advisor/major professor
- ✓ Forward to the Graduate Program Coordinator (do not send directly to the Graduate School)

### **Checklist for the PhD Degree Conferral**

- 72 graduate credit hours are completed with an overall 'B' (3.0) average (a minimum of 60 credit hours of graduate course work plus a maximum of 12 credit hours of dissertation credit).
- A minimum grade of 'B' (3.0) in all required course work.
- Successful completion of the Comprehensive Examination.
- Registration and attendance at the graduate seminars when registered full-time, certified full-time, and/or when registered for a minimum of one credit hour of Dissertation Guidance.
- Completion of primary data collection requirement
- Completion of teaching assistantship requirement
- Completion of scientific communications requirement
- Departmental seminar presentation while in the final stages of the dissertation.
- Continuous registration from the date of matriculation (unless on an approved leave of absence).
- Successful completion of the General Preliminary Exam and Specialty Exam/Dissertation Proposal Defense.
- An approved **Application to Candidacy** filed with the Graduate School with all necessary attachments, including unofficial UB transcripts.
- Completion of UB's Responsible Conduct of Research (RCR) Training Requirement.
- Submission of an approved **Abstract of Proposed Research Form**.
- If beyond the seven-year time limit for completion of degree, an approved **Petition for an Extension of the Time Limit to Complete a Graduate Degree Program** is on file in the Graduate School.
- Review unofficial transcript and address any "I" or "J" grades.
- Successful completion and defense of the dissertation.
- M-Form** submitted to the Graduate School by the Graduate School's established deadlines.
- Graduation Information Form** submitted to the Department. The form is available at the following link:  
<http://sphhp.buffalo.edu/content/dam/sphhp/epidemiology-and-environmental-health/pdf/students/graduation-information-form.pdf>
- One bound copy of the dissertation submitted to the Department and to each member of the student's committee if desired.
- Electronic submission of the dissertation to the Graduate School.
- Doctoral Degree Recipients Survey** submitted to the Graduate School.



<b>Degree Conferral Timetable</b>			
<b>For Degree Conferral on:</b>	<b>February 1</b>	<b>June 1</b>	<b>September 1</b>
Application to Candidacy due to the Department	<b>September 1</b>	<b>February 1</b>	<b>June 1</b>
Application to Candidacy due at the Graduate School	<b>October 1*</b>	<b>March 1*</b>	<b>July 1*</b>
ALL required materials must be received in the Graduate School by the official deadline posted on the Graduate School website ( <a href="http://grad.buffalo.edu/study/graduate/requirements.html">http://grad.buffalo.edu/study/graduate/requirements.html</a> )			

\* **Read Carefully:** The Application to Candidacy (ATC) form must be submitted to the Department a minimum of FOUR weeks before it is due at the Graduate School. This will allow time for it to be reviewed and approved by the MS/PhD Graduate Director and Associate Dean for Academic and Student Affairs before it is forwarded to the Graduate School. Incomplete ATCs will be returned to the student. ATCs received after the Department deadline may result in delay of degree conferral.

## **PHD COMPETENCIES**

Found at <http://sphhp.buffalo.edu/epidemiology-and-environmental-health/education/epidemiology-phd/competencies.html>

### PHD C1. Application of Methodology.

Demonstrate advanced understanding and application of methodologic issues used in the planning, execution, and interpretation of results from varied epidemiologic research study designs including the ability to critically evaluate these designs in both the review of literature and the development of research study proposals.

### PHD C2. Advanced Analysis and Data Interpretation.

Demonstrate expertise in advanced analysis and interpretation of data, including data cleaning, data file construction and management, and implementation of analytic strategies appropriate for the type of data, study design, and research hypothesis, with understanding of underlying assumptions, strengths and limitations of epidemiologic and biostatistical methods.

### PHD C3. Develop a Research Study Proposal.

Demonstrate proficiency in the development of a research study proposal (including grant proposals) that could be reviewed by an external group.

### PHD C4. Data Collection.

Participate in primary data collection.

### PHD C5. Written and Oral Communicate Skills.

Demonstrate effective written and oral skills for communicating the results of an epidemiologic research study in the form of an abstract, manuscript, poster, and/or oral presentation in an external peer-review setting.

### PHD C6. Culminating Dissertation.

Perform as a dissertation, a hypothesis-driven epidemiologic research study that includes a minimum of three aims publishable as manuscripts that demonstrate mastery and understanding in one or more overarching content area(s). This includes developing testable hypotheses using appropriate data and study design(s), conducting data analysis, and interpreting study results in epidemiologic and broader contexts.

**NOTE:** In addition to the competencies listed above, competencies of the Epidemiology MS degree will also be attained through the Epidemiology PhD program.

## UNDERGRADUATE COURSE LIST BY TOPIC AREA

Courses listed below for undergraduates only include EEH courses and PUB courses taught by EEH faculty. For more information regarding undergraduate courses, see:

<https://sphhp.buffalo.edu/home/education/undergraduate-and-minors/public-health.html>

- PUB 102 Historical and Contemporary Public Health Problems
- PUB 199 UB Seminar, Health - You, Me or We?
- PUB 210 Global Public Health
- PUB 301 Introduction to Epidemiology
- PUB 310 Health and Disease

## GRADUATE COURSE LIST BY TOPIC AREA

\*\* Course designed for advanced doctoral students.

### **Epidemiologic Research Methods and Core Courses**

- EEH 500 Introduction to Epidemiology
- EEH 501 Principles of Epidemiology
- EEH 502 Advanced Methodology
- EEH 505 Application of Biostatistics to Epidemiology I
- EEH 506 Application of Biostatistics to Epidemiology II
- EEH 510 Principles of Measurement in Public Health
- EEH 601 Advanced Epidemiologic Study Designs\*\*
- EEH 610 Fundamentals of Grant Development\*\*
- EEH 611 Analysis of Health Data\*\*

### **Health Services Administration**

- EEH 530 Introduction to Health Care Organization
- EEH 531 Administrative Theory and Practice for Public Health Practitioners
- EEH 532 Financial Management for Public Health Professionals
- EEH 536 Health Policy in the United States
- EEH 537 Public Health: Legal and Ethical Perspectives
- EEH 538 Introduction to Health Economics
- EEH 539 The Business of Health Care

### **Environmental Health**

- EEH 550 Environmental Health
- EEH 551 Advanced Environmental Health Sciences

### **Epidemiology Electives**

- EEH 570 Cancer Epidemiology
- EEH 571 Epidemiology of Cardiovascular Disease
- EEH 572 Nutritional Epidemiology
- EEH 573 Epidemiology of Infectious Diseases
- EEH 574 Epidemics and Outbreaks
- EEH 575 Epidemiologic Applications to Environmental Health
- EEH 577 Perinatal Epidemiology
- EEH 670 Advanced Cancer Epidemiology and Prevention\*\*
- EEH 672 The Role of Physical Activity in the Etiology, Treatment and Prevention of Chronic Disease\*\*
- EEH 673 Molecular Epidemiology\*\*
- EEH 674 Fundamentals of Genetic Epidemiology\*\*

## **Seminars**

EEH 590 Contemporary Issues in Public Health  
EEH 591 Graduate Seminar

## **Informal Courses, Field Training, Thesis and Dissertation Guidance**

EEH 544 MPH Field Training  
EEH 596 Special Topics  
EEH 597 Independent Study Master's  
EEH 600 Thesis Guidance  
EEH 630 MPH Integrative Project  
EEH 696 Selected Topics  
EEH 697 Independent Study PhD  
EEH 698 Directed Research  
EEH 700 Dissertation Guidance

## **Other EEH Public Health Courses**

EEH 520 Biological Basis of Public Health  
EEH 521 Global Health

# UNDERGRADUATE COURSE DESCRIPTIONS

Courses listed below for undergraduates only include EEH courses and PUB courses taught by EEH faculty. For more information regarding undergraduate courses, see:

<https://sphhp.buffalo.edu/home/education/undergraduate-and-minors/public-health.html>

All courses are 3 credit hours unless otherwise indicated. If prerequisites are required, the grade achieved in the prerequisite required course must be B or higher.

## **PUB 102 Historical and Contemporary Public Health Problems – for undergraduates only**

This course is an integrative overview of both historical and contemporary public health problems and how they were/are being addressed. The course begins with a foundational module in public health to provide you with a general introduction to the arena of public health and the scope of this field in contemporary society. The course will also introduce you to the public health approach to improving health by integrating approaches from the five core areas of the discipline. Public health researchers and practitioners often examine lessons learned from previous generations as they consider strategies to effectively address current public health issues. Using a population perspective, we will examine the historical experience of the theory and practice of public health and consider the role of the field in addressing present-day issues and problems facing the nation and the globe. (Zorich)

Prerequisite: None

Spring Semester/Annual

## **PUB 199 UB Seminar, Health - You, Me or We? – for undergraduates only**

As individuals, we are often concerned with our own health- we want to be as healthy as possible, worry about getting sick, and try to manage our physical, mental, and social well-being in a variety of ways. As a society, we are often concerned with our health and others'. "Health" current events like global epidemics, the spread of obesity and its health consequences, controversy over health care reform, just to name a few issues, highlight the importance of health in many social contexts. In this course, we will use big ideas from public health to explore individual and societal concerns about health. In particular, we will use the lens of public health to understand explain and address three big issues: mandatory vaccination (should parents be required to vaccinate their children?), health disparities (why does health depend on things like education, income, and race/ethnicity), and health care reform (should people be required to have health insurance and how do we pay for it?). (Zorich)

Prerequisites: None

Fall Semester/Annual

## **PUB 210 Global Public Health – for undergraduates only**

PUB 210 will provide upper division undergraduate students with a meaningful appreciation of the challenges in achieving the human right to health in low- and middle-income countries worldwide. Students will understand the leading causes of illness, death, and disability and approaches to prevention and control of those conditions in resource-constrained settings. Students will also understand the complex interrelationships between social, environmental, and political factors that affect health and well-being in low- and middle-income countries. Further, students will learn how to critically evaluate solutions to improve global health. (Ram)

Prerequisite: None

Spring Semester/Annual

## **PUB 301 Introduction to Epidemiology – for undergraduates only**

The purpose of this course is to introduce the basic principles and methods of epidemiology and its role in public health. Epidemiology is the study of the distribution and determinants of health-related events in populations and its application to the prevention and control of diseases in human populations. Students will learn how to explore natural phenomena using basic epidemiologic principles and methods, including hypothesis development, data measurement and interpretation, experimentation, and the evaluation of evidence. Students will be introduced to fundamental concepts in epidemiology and to how the basic tenets in epidemiology are used to solve issues in public health. A variety of exposures and health outcomes will be used as examples in class to demonstrate the broad application of epidemiologic concepts in public health to resolve health issues in society. (Ochs-Balcom)

Prerequisite: None

Fall Semester/Annual

**PUB 310 Health and Disease – for undergraduates only**

This course provides an overview of the biological bases of health and illness as well as an overview of the intersections of biological, personal, and environmental determinants of health and illness. Students will learn about key biological processes and physiological systems relevant to public health issues, as well as how biology and the environment interact to lead to health outcomes. (Zorich)

Prerequisite: PUB 101 and PGY 300

Fall Semester/Annual

## GRADUATE COURSE/SEMINAR DESCRIPTIONS

The courses listed in this section of the handbook include all EEH courses.

All courses are 3 credit hours unless otherwise indicated. If prerequisites are required, the grade achieved in the prerequisite course must be B or higher.

### Courses - Department of Epidemiology and Environmental Health

**EEH 500 Introduction to Epidemiology**

This course is intended to provide a basic introduction to principles and methods of epidemiology. The course emphasizes the conceptual aspects of epidemiologic investigation and application of these concepts in public health and related professions. Topics include overview of the epidemiologic approach to studying disease; the natural history of disease; measures of disease occurrence, association and risk; epidemiologic study designs; disease surveillance; population screening; interpreting epidemiologic associations; causal inference using epidemiologic information; and application of these basic concepts in the context of selected major diseases and risk factors. Please note that this course cannot be used for degrees that require EEH 501 or as a prerequisite for courses that require EEH 501. (Zorich)

Prerequisite: None

Spring Semester/Annual

**EEH 501 Principles of Epidemiology (4 credits)**

Introduction to the basic principles, methods, and uses of epidemiology. This course is a master's/doctoral level course designed to introduce epidemiology, its methods and its role in public health. A major portion of the course will be devoted to an overview of fundamental epidemiologic methods used in public health research and practice. The student will be familiarized with basic measures used in describing disease frequency in populations. Descriptive and analytic approaches to the study of disease will be explored, and a perspective on the role of epidemiologic methods in health services planning and evaluation will be provided. Problem solving exercises will be used to provide students with an opportunity to tabulate data and apply subject matter developed during lectures and in reading assignments. At the end of the course students should have a general understanding of the uses and limitations of epidemiologic inquiry. This understanding should provide the basis for applying epidemiologic concepts in work-related settings and in other courses in the public health curriculum. (LaMonte)

Prerequisite: None

Fall Semester/Annual

**EEH 502 Advanced Methodology**

Provides information on advanced topics in epidemiological methods. Emphasis is on various concepts related to the conduct of epidemiologic research. This course extends understanding of topics presented in EEH 501 and presents new topics in advanced epidemiologic methods. (Bonner)

Prerequisite: EEH 501

Spring Semester/Annual

**EEH 505 Application of Biostatistics to Epidemiology I (1 credit)**

The course is for students in the public health sciences who seek to develop data analysis skills. The course includes emphasis on the application and interpretation of statistical tests using SAS software. Students will learn basic methods for data organization and management as well as skills in data exploration, graphical and tabular display. Topics include descriptive statistics, hypothesis testing for means, proportions, elementary non-parametric techniques, tests, ANOVA, correlations, linear and logistic regression. The course culminates in group data analysis projects. (Millen)

Prerequisite: None

Fall Semester/Annual

**EEH 506 Application of Biostatistics to Epidemiology II (4 credits)**

This course is designed to teach students how to perform multivariate statistical analysis commonly used in epidemiologic studies. Topics include correlation, multivariate logistic and linear regression, regression diagnostics, modeling strategies, and survival analysis. Students learn SAS coding in the lab session. (Zhao)

Prerequisites: EEH 501, EEH 502 (concurrent registration), EEH 505, and STA 527

Spring Semester/Annual

**EEH 510 Principles of Measurement in Public Health**

An explanation of basic principles and methods of measurement and their application in epidemiologic research. These include development and use of different types of instruments and scales for measuring biological characteristics and behavioral and social constructs, questionnaire construction and validation, sampling, data collection methods, and fundamental principles underlying data analysis and interpretation. Students will gain practical experience developing a questionnaire relevant to an epidemiologic issue, role-playing interview techniques in class, and resolving issues related to other data collection methods, sampling, and preparing data for analysis. (Rudra)

Prerequisite: None

Fall Semester/Annual

**EEH 520 Biological Basis of Public Health**

Intended for students with little or no background in the biological sciences and health professions. The course provides a broad overview of public health topics related to human health and disease focusing on disease etiology with particular emphasis on parasitic and microbial infections plus a review of the anatomy, physiology, and pathology of selected major organ systems and associated diseases of public health importance. (Ochs-Balcom)

Prerequisite: None

Spring Semester/Annual

**EEH 521 Global Health**

Provides an overview of compelling public health problems among the world's poor. Topics addressed will include infectious diseases such as malaria, HIV/AIDS, and tuberculosis; the rise of tobacco-related disease; the role of water, hygiene, and sanitation in the prevention of disease; maternal and neonatal mortality; surveillance; and disaster response in the resource-poor setting. Students will gain practical experience in developing and presenting strategies for the implementation and evaluation of public health programs in the resource-poor setting. (Kordas)

Prerequisite: None

Spring Semester/Annual

**EEH 530 Introduction to Health Care Organization**

Introduces students to the historical development, structure, operation, and current and future directions of the major components of the American health care delivery and public health systems. It examines the ways in which health care services are organized and delivered, the influences that impact health care public policy decisions, factors that determine priorities in financing health care services and the relationship of health care costs to measurable benefits. The course enables students to assess the role of organized efforts to influence health policy formulation, and the contributions of medical technology, research findings, and societal values to the evolving U.S health care delivery system. Class time is also devoted to exploring emerging policy, ethical and legal dilemmas resulting from medical and technological advances. (Noyes)

Prerequisite: None

Fall Semester/Annual

**EEH 531 Administrative Theory and Practice for Public Health Practitioners**

Provides students with an overview of the development of management and leadership concepts within health care organizations. Delves into the strategic and policy issues challenging health care systems (access, financing, defining and quantifying quality, etc.). Provides a practical framework of the professional competencies and skills needed to be an effective administrator within a complex health care system. (Staff)

Prerequisite: None

Spring Semester/Annual

### **EEH 532 Financial Management for Public Health Professionals**

The course introduces students to fundamental management principles of budgeting and accounting used in health care organizations and assumes no prior knowledge in accounting or financial management. This course will focus on the relationship between financial management and organizational decision making in order to maximize efficiency as defined by the provision of the maximum amount of high quality care utilizing the least amount of inputs. In this course we will learn basic healthcare financial management and accounting terminology and how to apply financial information to organizational planning, implementation, and methods to evaluate and control costs. Managerial accounting techniques of capital and cash budgets, indirect cost allocation, and variance analysis will be reviewed as well as their relation to operating an efficient organization. Students will learn how to analyze an organization's financial condition through balance sheets, cash flow statements, and publicly reported financial documents. We will review the workings of capital markets (bond and equity), asset valuation techniques, and financial decision-making based on *pro forma* analysis and lease versus buy as it relates to service expansion and debt financing. Students mastering these techniques will be able to apply them in a variety of healthcare settings to help the organization employing them meet mission-based and strategic and tactical objectives. (Malecki)

Prerequisite: None

Spring Semester/Annual

### **EEH 536 Health Policy in the United States**

Introductory course that explores the U.S. public policymaking process and its impacts upon the determinants of the population's health status including environmental, socio-cultural, ethnic, demographic, economic, lifestyle, service access and other factors. The course provides an historical overview of benchmark developments in U.S. health care, highlighting significant influences that transformed the industry into its current form. With the incremental evolution of U.S. health policy as the context, the course discusses individual and societal values concerning health and the operation of the political system. Each step of the policymaking process highlights the roles of key players in the legislative, judiciary and executive branches of government. The course identifies and characterizes health care system stakeholders ranging from private citizens to powerful industry lobbying organizations and the means and methods used to influence the formulation, implementation and modification of health policy. The course concludes with a discussion of the characteristics and role of political competence in the U.S. policymaking process. (Cao)

Prerequisite: None

Fall Semester/Annual

### **EEH 537 Public Health: Legal and Ethical Perspectives**

Provides an understanding of how the law serves as a tool in advancing a public health agenda. The class is interdisciplinary, including law students and students from public health-related fields. The course examines the history of public health law, the tension between state and federal governments in the regulation of the public's health, and the conflicts between governmental powers and individual autonomy. The course considers the standard practice of public health professionals to prevent disease and promote healthy behaviors in the wake of emerging public health challenges such as racial disparities in health care, a potential flu pandemic, the obesity epidemic, and the abortion debate. (Wicher)

Prerequisite: None

Spring Semester/Annual

### **EEH 538 Introduction to Health Economics**

Provides the ability to apply economic reasoning to health care markets. Topics include: organization of the hospital, payment systems, costs and charges, the market for physician services, cost-effectiveness analysis, outcomes research, and health care reform. (Cao)

Prerequisite: None

Spring Semester/Annual

### **EEH 539 The Business of Health Care**

This course is designed to be an overview of the health care industry and a framing of the severe challenges facing leaders in the field. It will take a business approach to the issues presented, but will always juxtapose financial issues with value creation. It begins with a short look at classic economics, and why they do not always apply in health care. It will take an in-depth look at the Patient Protection and Affordable Care Act, and the implications it has on all parts of the industry. It will follow with a review of each component of the industry: government, health plans, employers, providers, and suppliers. Each review will focus on the unique challenges leaders are facing in a dynamic changing environment. (Zielinski)

Prerequisite: None

Spring Semester/Annual



**EEH 544 MPH Field Training (0-7 credits)**

Allows students to synthesize the knowledge and skills developed during the academic portion of their program in a practical application setting. Field training experiences vary depending upon the student's interest and concentration area; experiences need to be approved by the MPH concentration director. (Staff)

Prerequisite: None

Fall/Winter/Spring/Summer Semesters/Annual

**EEH 550 Environmental Health**

Introductory course that explores the role of environmental factors in health with an emphasis on characterization, assessment, and control of environmental hazards. Topics include application of toxicologic and epidemiologic methods in assessing risk and setting exposure limits; the nature of and control of hazards associated with food, water, air, solid and liquid waste, occupation, and radiation; risk communication and management, environmental justice; and environmental laws. The course concludes by examining the impact of human activity, such as energy use and pollution, on the environment and how human-induced environmental change, in turn, impacts public health and that of the planet as a whole. (Ren)

Prerequisite: None

Spring Semester/Annual

**EEH 551 Advanced Environmental Health Sciences**

Advanced course designed to provide students with the latest knowledge and an in-depth discussion of how the environment interacts with human biological systems and potentiates various health effects over the life cycle. The course includes a detailed examination of environmental hazards, exposure assessment, human susceptibility, biological response pathways, application of biomarkers in environmental health studies and the disease burden of environmental exposure. The course focuses on three major environmental topics: air pollution, water pollution and food safety. (Ren)

Prerequisites: EEH 501 and EEH 550

Spring Semester/Annual

**EEH 570 Cancer Epidemiology**

Provides an in depth overview of the epidemiology in various cancer sites. Standard methodologies and analytic techniques used in cancer epidemiology will be covered. Attention given to critical review of known or suspected cancer risk factors. (Moysich)

Prerequisite: None

Spring Semester/Annual

**EEH 571 Epidemiology of Cardiovascular Disease**

The pathophysiological basis of the major cardiovascular diseases is studied in relation to their clinical and epidemiological characteristics. Findings from major epidemiological studies and clinical trials are reviewed, and their implication for preventive measures are discussed. (LaMonte)

Prerequisite: EEH 501

Fall Semester/Annual

**EEH 572 Nutritional Epidemiology**

Discusses the major strengths and weakness of dietary assessment methods used in epidemiologic studies to investigate associations between diet and disease (e.g., 24-hour recalls, food records, food frequency questionnaires, nutritional biomarkers). An introduction to nutritional epidemiologic analysis will be presented and discussed including analysis of nutrients, foods and dietary patterns. Critical evaluation of nutritional epidemiologic literature will be practiced. (Millen)

Prerequisite: EEH 501

Spring Semester/Biennial

**EEH 573 Epidemiology of Infectious Diseases**

Focuses on the theory and epidemiologic methods used in the epidemiologic study of infectious diseases. Emphasis is on the investigation of infectious disease outbreaks, evaluations of vaccine efficacy and effectiveness, and surveillance for infectious diseases of public health importance. The course includes an examination of the following infectious diseases, among others: HIV/AIDs, influenza, foodborne disease, sexually transmitted infections, dengue fever, and vaccine-preventable diseases. (Zorich)

Prerequisite: EEH 501

Fall Semester/Annual

**EEH 574 Epidemics and Outbreaks**

Advanced course studying recent outbreaks of infectious disease. Each session will deal with an individual agent, review recent outbreaks, and discuss public health implications. Emphasis will be placed on epidemiologic principles, maneuvers by public health authorities to investigate and contain outbreaks, and relationships to the media. Topics and outbreaks will be selected with immediacy and relevance to public health. (Lindstrom)

Prerequisite: EEH 573

Spring Semester/Biennial

**EEH 575 Epidemiologic Applications to Environmental Health**

Provides epidemiology and environmental health students with a working knowledge of epidemiologic theory and practice applied to issues of environmental health. Case studies and specific environmental issues will be used to illustrate the application of epidemiologic theory to understand the role of environmental factors in the etiology of disease. (Mu)

Prerequisite: EEH 501

Fall Semester/Biennial

**EEH 577 Perinatal Epidemiology**

Provides an overview of the current field of perinatal epidemiology, including study designs, exposure and outcome measurement, data resources, and methodological challenges most relevant to the field. Topics of interest will include pregnancy and delivery complications, maternal and fetal morbidities and mortality, and maternal and paternal adverse exposures. (Wen)

Prerequisite: EEH 501

Fall Semester/Biennial

**EEH 590 Contemporary Issues in Public Health (1 credit)**

This course introduces students to major public health issues from a practice-based perspective. Through presentations by public health leaders and practitioners, readings, group discussion, class activities and analyses, students practice integrating concepts to better understand issues, and develop recommendations for responses based on evidence, and ethical and cultural considerations. Primary areas of exploration for this course are ethics, evidence, policies, leadership, collaboration, cultural competence and communication. Course content focuses on major public health issues today, and comes from the Centers for Disease Control and Prevention (CDC), American Public Health Association (APHA), World Health Organization (WHO), local and state health departments, community-based organizations, healthcare organizations, and other agencies. There is no proscribed text or bibliography for the course. Presenters may, however, provide material as appropriate for distribution to students. (Krytus)

Prerequisite: None

Fall/Spring Semesters/Annual

**EEH 591 Graduate Seminar (0 credits)**

Intended to inform faculty and MS and PhD students in EEH about new and continuing areas of research and public policy issues in public health and epidemiology. Invited speakers will include EEH and Roswell Park faculty, graduate students, faculty from other departments at the University at Buffalo, and nationally and internationally recognized experts in public health and epidemiology from outside the University. (Staff)

Prerequisite: None

Fall/Spring Semesters/Annual

**EEH 596 Special Topics (3 credits)**

Special topics for master's students (MS and MPH) determined by individual faculty interest. (Staff)

Prerequisite: None

Fall/Winter/Spring/Summer Semesters

**EEH 597 Independent Study Master's (1-6 credits)**

For master's students (MS or MPH) with special interests not satisfied through the formal course work, there is an opportunity to pursue independent study under the direction of a faculty member. (Staff)

Prerequisite: Permission of instructor

Fall/Winter/Spring/Summer Semesters/Annual

**EEH 600 Thesis Guidance (1-10 credits, can only register for a maximum of 6 credits/semester)**

Through the thesis students will design, implement, complete and report on significant and original, independent epidemiologic research. Students will conduct their research under the supervision of their major professor and a thesis committee. A maximum of 6 credits allowed per semester. (Staff)

Prerequisite: None

Fall/Winter/Spring/Summer Semesters/Annual

**EEH 601 Advanced Epidemiologic Study Designs**

Advanced course focused on development and design of studies using the three major study designs in epidemiologic and public health research: cohort studies, case-control studies, and randomized trials. Topics covered include developing a study question, identifying, recruiting, and enrolling a study population, exposure assessment, ascertaining valid outcomes, bias and confounding, analytic considerations, randomization and blinding, monitoring adverse events, participant well-being, ethical considerations, and reporting and interpreting study findings. Students gain practical experience in critiquing published research that uses each of the study designs, and in developing a research question and designing an appropriate study utilizing each of the study designs to address the question. (Freudenheim, Bonner, Smith)

Prerequisites: EEH 501 and EEH 502

Fall Semester/Annual

**EEH 610 Fundamentals of Grant Development**

This course is designed for advanced PhD students who are committed to obtaining extramural support for scientific research. This course involves interactive class discussion of readings focused on planning and writing grants, with emphasis on funding from the National Institutes of Health (NIH). This class covers how to obtain information on funding opportunities, understanding the language of grants, development of the common sections of grant proposals, and understanding the grant review process. This course also involves an introduction to budget planning and Institutional Review Board (IRB) requirements for grant submission. All students are required to design and write a research proposal according to NIH guidelines. Students who enroll in the course should have a grant proposal topic of interest to them at the start of class. In addition to class discussions on assigned readings, class time is also be used as a workshop for grant writing and feedback on grant drafts. (Millen)

Prerequisites: EEH 501, EEH 502, EEH 505, and STA 527

Fall Semester/Annual

**EEH 611 Analysis of Health Data (4 credits)**

Provides students in the health sciences with practical experience in preparing, analyzing and reporting findings from epidemiologic and other health-related data. Using existing epidemiologic data sets, students complete exercises related to data cleanup, data file construction and management, basic descriptive statistics, analytical strategies, biostatistical analysis, and data interpretation. Course requirements include analysis and reporting of findings from analysis of existing health-related data. (Kordas)

Prerequisites: EEH 506, or permission of instructor

Spring Semester/Annual

**EEH 630 MPH Integrative Project (3 credits)**

The purpose of the integrative projects is for MPH students to integrate core public health knowledge and skills. It will take the form of a paper prepared during the concluding semester of the student's program. (Staff)

Prerequisite: Permission of instructor

Fall/Winter/Spring/Summer Semesters/Annual

**EEH 670 Advanced Cancer Epidemiology and Prevention**

Seminar course focused on an understanding of and critical evaluation of research in cancer biology and epidemiology including an in-depth examination of methodological issues. (Freudenheim)

Prerequisites: EEH 501, EEH 502, EEH 505, EEH 570, and STA 527

Spring Semester/Biennial

**EEH 672 The Role of Physical Activity in the Etiology, Treatment and Prevention of Chronic Disease**

Designed for students interested in expanding their knowledge and understanding of physical activity research and the public health implications of an active or inactive lifestyle. The major emphasis will be on methodological issues in physical activity research, and the role of physical activity in health and chronic disease. The course is intended to develop critical thinking, research, and decision-making skills for independent researchers and clinicians. (LaMonte)

Prerequisite: EEH 501

Spring Semester/Biennial

**EEH 673 Molecular Epidemiology**

Molecular epidemiology deals with the contribution of potential genetic and environmental risk factors, identified at the molecular and biochemical level, to the etiology, distribution and control of disease in populations. An understanding of molecular mechanisms involved in disease etiology, and their potential uses in epidemiology is the focus. This course lays the groundwork for reading, interpreting, and critically appraising molecular epidemiologic studies, as well as incorporating molecular methodology into one's own research designs. (Bonner)

Prerequisites: EEH 501, EEH 502, EEH 505, and STA 527

Fall Semester/Biennial

**EEH 674 Fundamentals of Genetic Epidemiology**

An overview of the field of genetic epidemiology including how to study the genetic causes of phenotypic variation. Topics include human genetics, molecular genetics, and population genetics as they apply to the conduct of a genetic epidemiology study. The concepts of heritability and linkage disequilibrium are covered. The course covers aspects of segregation, linkage, and association as they are used in family- and population-based studies to search for disease-associated genes. Current concepts in the genetics of complex traits as well as an exploration of online databases used in genetic epidemiology are included. (Ochs-Balcom)

Prerequisites: EEH 501, EEH 502, EEH 505, and STA 527

Spring Semester/Biennial

**EEH 696 Selected Topics (3 credits)**

Selected topics for PhD students determined by individual faculty interest. (Staff)

Prerequisite: None

Fall/Winter/Spring/Summer Semesters

**EEH 697 Independent Study PhD (1-9 credits, can only register for a maximum of 6 credits/semester)**

For PhD students with special interests not satisfied through the formal course work, there is an opportunity to pursue independent study under the direction of a faculty member. (Staff)

Prerequisite: Permission of instructor

Fall/Winter/Spring/Summer Semesters/Annual

**EEH 698 Directed Research (1-15 credits, can only register for a maximum of 6 credits/semester)**

For PhD students to engage in research under the mentorship of a faculty member. (Staff)

Prerequisite: Permission of instructor

Fall/Winter/Spring/Summer Semesters/Annual

**EEH 700 Dissertation Guidance (1-12 credits, can only register for a maximum of 10 credits/semester)**

Through the dissertation, students design, implement, complete and report on significant and original, independent epidemiologic research. Students conduct their research under the supervision of their major professor and a dissertation committee. A maximum of 10 credits allowed per semester. (Staff)

Prerequisite: None

Fall/Winter/Spring/Summer Semesters/Annual

## EPIDEMIOLOGY AND ENVIRONMENTAL HEALTH CORE AND TEACHING FACULTY

The following EEH teaching faculty list includes individuals who teach EEH courses and those who can serve as primary mentors for EEH MPH, MS and PhD students.

**Christine Ambrosone**, PhD, University at Buffalo. Professor of Oncology; Senior Vice President, Population Sciences; Chair, Cancer Prevention & Control, Roswell Park Comprehensive Cancer Center; Research Professor, Epidemiology and Environmental Health. Major interests: molecular epidemiology, cancer treatment outcomes, risk factors associated with the development of breast cancer.

**Matthew Bonner**, PhD, MPH, University at Buffalo; MPH, University of Rochester. Associate Professor, Epidemiology and Environmental Health. Major interests: environmental and occupational epidemiology, cancer epidemiology, exposure to pesticides, air pollution, radon, polycyclic aromatic hydrocarbons, phthalates.

**Ying (Jessica) Cao**, PhD, Cornell University. Assistant Professor, Health Services Policy and Practice Division, Epidemiology and Environmental Health. Major Interests: Health Economics, Behavioral Economics, Decision-Making in Health and Healthcare, Economics of Food and Nutrition, Global Health, Cost-Benefit Analysis.

**Jo Freudenheim**, PhD, University of Wisconsin-Madison. UB Distinguished Professor and Chair, Epidemiology and Environmental Health. Major interests: molecular epidemiology, nutrition, life course epidemiology, cancer, especially breast cancer, microbiome and cancer.

**Andrew Hyland**, PhD, University at Buffalo. Chair, Department of Health Behavior, Division of Cancer Prevention & Population Sciences, Roswell Park Comprehensive Cancer Center; Director, New York State Smokers' Quitline; Research Professor, Epidemiology and Environmental Health. Major interests: evaluation of tobacco policies, cancer and tobacco surveillance, biostatistical support.

**Katarzyna (Kasia) Kordas**, PhD, Johns Hopkins Bloomberg School of Public Health. Associate Professor, Epidemiology and Environmental Health. Major interests: environmental epidemiology, global health, toxic metals and metal mixtures and child development, nutrient-metal interactions, dietary predictors of toxicant exposure, gene-environment interactions

**Kim Krytus**, MSW, MPH, CPH, University at Buffalo. Director of MPH initiatives at School of Public Health and Health Professions. Major interests: public health practice, global health, refugee healthcare and community health assessments with Native American Nations.

**Michael LaMonte**, PhD, MPH, University of Utah; MPH, University of South Carolina. Research Associate Professor, Epidemiology and Environmental Health. Major interests: epidemiology of physical activity/functional capacity; epidemiology of cardiovascular disease and periodontal disease, preventive medicine, healthy aging with focus in postmenopausal women.

**Heather Lindstrom**, PhD, Case Western Reserve University. Research Assistant Professor, Epidemiology and Environmental Health, and Department of Emergency Medicine. Major interests: intersection of public health and emergency medicine, sexually transmitted infections, aging and health communication/risk perception.

**Walter Ludwig**, RPh, MBA, University at Buffalo. Research Instructor, Epidemiology and Environmental Health. Major interests: health care operations, new product development, financial analysis.

**Joshua Malecki**, EdD, D'Youville College. Research Assistant Professor, Epidemiology and Environmental Health. Major interests: veteran healthcare.

**James Marshall**, PhD, University of California at Los Angeles. Distinguished Professor Emeritus, Roswell Park Comprehensive Cancer Center; Research Professor, Epidemiology and Environmental Health. Major interests: chemoprevention strategies in human populations, diet and breast cancer, epidemiologic analysis of predictors of genetic mutation in adenomatous polyps, familial colon cancer registries, endometrial cancer, metabolic factors among multi-ethnic populations.

**Susan McCann**, PhD, RD, University at Buffalo. Professor of Oncology, Department of Cancer Control and Prevention, Division of Cancer Prevention and Population Sciences, Roswell Park Comprehensive Cancer Center; Research Professor, Epidemiology and Environmental Health. Major interests: nutritional epidemiology, molecular epidemiology, diet and cancers of the reproductive organs, dietary phytoestrogen intake and genetic susceptibility to breast cancer.

**Amy Millen**, PhD, University of Wisconsin-Madison. Associate Professor, Epidemiology and Environmental Health. Major interests: nutritional epidemiology, diet and age-related chronic disease (age-related eye disease, periodontal disease, and cancer), micronutrient exposure with emphasis on vitamin D.

**Kirsten Moysich**, PhD, University at Buffalo. Distinguished Professor of Oncology and Academic Program Chair, Department of Cancer Pathology and Prevention, Roswell Park Comprehensive Cancer Center; Research Professor, Epidemiology and Environmental Health. Major interests: role of inflammation in ovarian cancer, radiation exposure and subsequent reproductive health indicators, environmental risk factors for breast cancer.

**Lina Mu**, MD, PhD, Shanxi Medical University; PhD, Fudan University. Associate Professor, Epidemiology and Environmental Health. Major interests: environmental epidemiology, air and water pollution, cancer molecular epidemiology, gene-environment interaction, cancer survival.

**Ekaterina (Katia) Noyes**, PhD, MPH, University of Rochester School of Medicine and Dentistry. Professor and Director, Division of Health Services Policy and Practice, Epidemiology and Environmental Health. Major interests: outcomes and quality of care assessment, economic evaluation of healthcare programs, comparative effectiveness research, multidisciplinary team science and stakeholder engagement, regional care delivery in surgical oncology.

**Heather Ochs-Balcom**, PhD, University at Buffalo. Associate Professor, Epidemiology and Environmental Health. Major interests: genetic epidemiology of complex traits, cancer health disparities, gene-environment interactions.

**James Olson**, PhD, Medical College of Wisconsin. UB Distinguished Professor, Pharmacology and Toxicology; and Director, Division of Environmental Health Sciences, Epidemiology and Environmental Health. Major interests: assessing health risks, biomarkers of exposure, effect and susceptibility to organophosphate pesticides and persistent halogenated aromatic hydrocarbons.

**Pavani Ram**, MD, Mount Sinai School of Medicine. Associate Professor, Epidemiology and Environmental Health and Director, Community for Global Health Equity. Major interests: global health, child survival, handwashing and disease outcomes, diarrheal diseases, acute respiratory infections, infectious disease epidemiology.

**Xuefeng Ren**, MD, PhD, MD. Baotou Medical College; PhD, University of Washington. Associate Professor, Epidemiology and Environmental Health. Major interests: study of environmental mutagens and carcinogens, mechanism of carcinogenesis, genetic/epigenetic biomarkers of environment toxicants, tumor suppressor genes, exposure biology and exposome.

**Carole Rudra**, PhD, MPH, University of Washington; MPH, Emory University. Research Assistant Professor, Epidemiology and Environmental Health. Major interests: impact of physical activity on pregnancy complications, maternal wellness, geographic information systems for exposure assessment in epidemiologic studies of physical activity, the built environment, and environmental exposures.

**Laura Smith**, PhD, Cornell University. Assistant professor, Epidemiology and Environmental Health. Major interests: mycotoxin exposure, pregnancy exposure, birth outcomes.

**John Violanti**, PhD, University at Buffalo. Research Professor, Epidemiology and Environmental Health. Major interests: assessment of psychological and biological indicators of chronic police stress.

**Jean Wactawski-Wende**, PhD, University at Buffalo. SUNY Distinguished Professor and Dean of the School of Public Health and Health Professions, Epidemiology and Environmental Health. Major interests: women's health, osteoporosis, cancer, hormone therapy, menopause, hormonal variation, periodontal disease, oxidative stress.

**Meng Wang**, PhD, Utrecht University. Assistant Professor, Epidemiology and Environmental Health. Major interests: environmental exposure monitoring, air pollution modeling, and health impacts of environmental exposures.

**Xiaozhong Wen**, MBBS, PhD, Sun Yat-sen University, PhD, Brown University. Assistant Professor, Department of Pediatrics, Jacobs School of Medicine and Biomedical Sciences, Major interests: developmental origins of obesity and cardio-metabolic diseases, including maternal diet, smoking, and other lifestyle during pregnancy, placenta, intrauterine growth, epigenetics, infancy growth, and clinical intervention for pediatric obesity.

**Camille Wicher**, PhD, Esq., RN, MSN. PhD and Esq. University at Buffalo, Roswell Park Comprehensive Cancer Center. Clinical Assistant Professor, Epidemiology and Environmental Health. Major interests: regulatory and ethical practices and scientific integrity within all facets of the Institute, including business ethics, conflicts of interest, human and animal subject research, and research biosafety.

**Jerome Yates**, MD, MPH, University of Illinois College of Medicine; MPH, Harvard School of Public Health. Clinical Professor, Epidemiology and Environmental Health; Adjunct Professor, Medicine and Oncology, University at Buffalo and Roswell Park Comprehensive Cancer Center. Major interests: adult acute leukemia, infection control in compromised patients, cancer rehabilitation, palliative and hospice care, cancer in the elderly, outcome disparities among disadvantaged populations.

**Lawrence Zielinski**, MBA, University at Buffalo. Executive in Residence, Healthcare Administration, School of Management. Major interests: value-based healthcare, senior healthcare.

**Jiwei Zhao**, PhD, University of Wisconsin at Madison. Assistant Professor, Department of Biostatistics. Major interests: statistical methodology including semiparametric modeling and methods; non-regular likelihood methods (including pseudo, penalized, conditional, empirical, etc.); missing data analysis (especially non-ignorable missing data) in longitudinal data and observational studies; case-control studies; high-dimensional data analysis and variable selection.

**Shauna Zorich**, MD, MPH, University at Buffalo. Clinical Assistant Professor, Epidemiology and Environmental Health. Major interests: development and delivery of undergraduate program in public health.

# SOURCES OF INFORMATION

Below are the websites for forms referred to in subsequent sections and checklists.

**GRADUATE SCHOOL WEB SITE:** [www.grad.buffalo.edu](http://www.grad.buffalo.edu)

Documents:

Graduate School Policy Library:

<http://grad.buffalo.edu/succeed/current-students/policy-library.html>

Graduate Faculty List:

<http://grad.buffalo.edu/succeed/current-students/grad-faculty.html>

Guidelines for Electronic Thesis/Dissertation Preparation and Submission:

<https://grad.buffalo.edu/study/graduate/etd.html>

Forms: <http://grad.buffalo.edu/succeed/current-students/forms.html>

Application to Candidacy Form (ATC)

Certification of Full-Time Status Form

Change Expected Conferral Date/Amend ATC

Extension of Time Limit for Degree Completion

Leave of Absence

Use of Prior Coursework

Transfer Credits Petition

**DEPARTMENT WEB SITE:** <http://sphhp.buffalo.edu/epidemiology-and-environmental-health.html>

Forms: <http://sphhp.buffalo.edu/epidemiology-and-environmental-health/information-for-current-students.html>

Independent Study Form

Directed Research Form

Abstract Form for MPH or MS and PHD

Thesis Committee Approval Form

Dissertation Committee Approval Form

MPH Program Field Training Web Site:

<https://sphhp.buffalo.edu/home/mph-program/education/field-training.html>

Online Field training forms:

<http://sphhp.buffalo.edu/home/mph-program/education/field-training.html> (requires login)

**STUDENT RESPONSE CENTER WEB SITE:** [www.registrar.buffalo.edu](http://www.registrar.buffalo.edu)

Academic Calendar: <http://registrar.buffalo.edu/calendars/academic/index.php>

Class Schedule: <http://registrar.buffalo.edu/schedules/index.php>

MYUB: <http://www.buffalo.edu/ubit/services/all/myub.html> (requires login)