The academic Master’s of Health Science (MHS) program allows students to select from the five areas of interest listed below. This full-time, one-year, 64 credit program is designed for those with a desire to enhance their research skills in public health and includes both methods and content courses. Students choose one of four methodological approaches: demography; behavioral and social sciences; epidemiology; or health services research and evaluation. The one-year curriculum is intended for students with two or more years of public health or related experience to inform their area of research inquiry prior to entry into the program.

The Department’s current areas of interest in the MHS program include:

- Adolescent Health (https://www.jhsph.edu/departments/population-family-and-reproductive-health/areas-of-interest/adolescent-health/)
- Child Health (https://www.jhsph.edu/departments/population-family-and-reproductive-health/areas-of-interest/child-health/)
- Population and Health (https://www.jhsph.edu/departments/population-family-and-reproductive-health/areas-of-interest/population-and-health/)
- Women’s, Sexual and Reproductive Health (https://www.jhsph.edu/departments/population-family-and-reproductive-health/areas-of-interest/women-sexual-and-reproductive-health/)

**Program Requirements**

Course location and modality is found on the BSPH website (https://publichealth.jhu.edu/academics/course-directory/coursesection-numbers-explained/).

**MHS Departmental Competencies**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PH.140.621</td>
<td>Statistical Methods in Public Health I</td>
<td>4</td>
</tr>
<tr>
<td>OR</td>
<td>PH.140.651</td>
<td>Methods in Biostatistics I</td>
</tr>
<tr>
<td>AND</td>
<td>PH.140.622</td>
<td>Statistical Methods in Public Health II</td>
</tr>
<tr>
<td>OR</td>
<td>PH.140.652</td>
<td>Methods in Biostatistics II</td>
</tr>
<tr>
<td>AND</td>
<td>PH.140.623</td>
<td>Statistical Methods in Public Health III</td>
</tr>
<tr>
<td>OR</td>
<td>PH.140.653</td>
<td>Methods in Biostatistics III</td>
</tr>
<tr>
<td>AND</td>
<td>PH.140.624</td>
<td>Statistical Methods in Public Health IV</td>
</tr>
<tr>
<td>OR</td>
<td>PH.140.654</td>
<td>Methods in Biostatistics IV</td>
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</tbody>
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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH.340.721</td>
<td>Epidemiologic Inference in Public Health I</td>
<td>5</td>
</tr>
<tr>
<td>OR</td>
<td>PH.340.751</td>
<td>Epidemiologic Methods I</td>
</tr>
</tbody>
</table>

**Competency 2: Applying epidemiological methods to address the health of populations (Choose 1)**

- PH.340.721 Epidemiologic Inference in Public Health I 5
- PH.340.751 Epidemiologic Methods I 5

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH.306.665</td>
<td>Research Ethics and integrity: U.S. and International Issues</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td>PH.550.600</td>
<td>Living Science Ethics - Responsible Conduct of Research</td>
</tr>
</tbody>
</table>

If student takes 550.600, must also take one of the following:

- PH.306.663 Legal and Ethical Issues in Health Services Management 3
- PH.221.616 Ethics of Public Health Practice in Developing Countries 2

**CEPH Learning Objectives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH.380.624</td>
<td>Maternal and Child Health Legislation and Programs</td>
<td>4</td>
</tr>
<tr>
<td>OR</td>
<td>PH.552.601</td>
<td>Foundational Principles of Public Health</td>
</tr>
</tbody>
</table>

CEPH Learning Objective 2 (Choose 1):

- PH.380.624 Maternal and Child Health Legislation and Programs 4

**CEPH Learning Objective 3 (Must take both)**

- PH.380.603 Demographic Methods for Public Health 4
- PH.552.603 The Role of Qualitative Methods and Science in Describing and Assessing a Population’s Health 0.5

CEPH Learning Objective 4:

- PH.380.600 Principles of Population Change 4

CEPH Learning Objective 5 (Choose 1):

- PH.340.721 Epidemiologic Inference in Public Health I 5
- PH.340.751 Epidemiologic Methods I 5

CEPH Learning Objective 6 (Choose 1):

- PH.380.664 Reproductive and Perinatal Epidemiology 4
- PH.552.606 The Critical Importance of Evidence in Advancing Public Health Knowledge 0.5
CEPH Learning Objective 7 (Choose 1):
PH.380.616  Child Health Epidemiology  3
OR
PH.552.607  Essentials of Environmental Health  0.5

CEPH Learning Objective 8:
PH.552.608  Biologic, Genetic and Infectious Bases of Human Disease  0.5

CEPH Learning Objective 9:
PH.380.604  Life Course Perspectives on Health  4

CEPH Learning Objective 10:
PH.380.604  Life Course Perspectives on Health  4

CEPH Learning Objective 11:
PH.552.611  Globalization and Population Health  0.5

CEPH Learning Objective 12:
PH.552.612  Essentials of One Health  0.5

Students must select 2 research methods courses within a methodological area of their choice: behavioral/social science; epidemiology (2 different options); or health services research and evaluation. The methods areas and course requirements are listed in alphabetical order below.

**Behavioral/Social Science Specialty Core Requirements**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PH.380.611</td>
<td>Fundamentals of Program Evaluation</td>
<td>4</td>
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</tbody>
</table>

Data Collection and Analysis (Choose 1):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PH.340.717</td>
<td>Health Survey Research Methods</td>
<td>4</td>
</tr>
<tr>
<td>PH.380.711</td>
<td>Issues in Survey Research Design</td>
<td>3</td>
</tr>
<tr>
<td>PH.224.690</td>
<td>Qualitative Research Theory and Methods</td>
<td>3</td>
</tr>
<tr>
<td>PH.330.657</td>
<td>Statistics for Psychosocial Research: Measurement</td>
<td>4</td>
</tr>
<tr>
<td>PH.140.658</td>
<td>Statistics for Psychosocial Research: Structural Models</td>
<td>4</td>
</tr>
<tr>
<td>PH.224.690</td>
<td>Qualitative Research Theory and Methods</td>
<td>3</td>
</tr>
<tr>
<td>PH.224.691</td>
<td>Qualitative Data Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

*Multi-term course. Students must take both 224.690 and 224.691 in order to receive a grade for the course. 220.689 is a prerequisite for the course.

**Epidemiology Specialty Core Requirements**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</table>
| Choose either Option 1 or Option 2:

**Option 1 Professional Track:**

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PH.340.722</td>
<td>Epidemiologic Inference in Public Health II</td>
<td>4</td>
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</table>

Data Collection (Choose 1):

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PH.340.717</td>
<td>Health Survey Research Methods</td>
<td>4</td>
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</table>

OR

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PH.380.711</td>
<td>Issues in Survey Research Design</td>
<td>3</td>
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OR

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PH.340.770</td>
<td>Public Health Surveillance</td>
<td>3</td>
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**Option 2 (must take both):**

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PH.340.752</td>
<td>Epidemiologic Methods 2</td>
<td>5</td>
</tr>
<tr>
<td>PH.340.753</td>
<td>Epidemiologic Methods 3</td>
<td>5</td>
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</table>

**Health Services Research and Evaluation Specialty Core Requirements**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
</table>
| Choose 1:
| PH.380.611 | Fundamentals of Program Evaluation         | 4       |
| OR
| PH.309.616 | Introduction to Methods for Health Services Research and Evaluation I | 2       |

AND

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PH.309.617</td>
<td>Introduction to Methods for Health Services Research and Evaluation II</td>
<td>2</td>
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</table>

Choose 1:

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PH.380.612</td>
<td>Applications in Program Monitoring and Evaluation</td>
<td>4</td>
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</table>
| OR
| PH.223.632 | Methods for Planning and Implementing Evaluations of Large-Scale Health Programs in Low and Middle income Countries | 4       |

OR

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<tr>
<th>Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PH.340.717</td>
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</table>

OR

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<tr>
<th>Code</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH.380.711</td>
<td>Issues in Survey Research Design</td>
<td>3</td>
</tr>
</tbody>
</table>

Students who take 309.616 must also take 309.617.

Students must take both 224.690 and 224.691 in order to receive a grade for course. Course 220.689 is a prerequisite for the courses.

**Adolescent Health Area of Interest**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
| Competency 1:
| PH.380.604 | Life Course Perspectives on Health         | 4       |
| Competency 2 (Choose 1):
| PH.380.600 | Principles of Population Change            | 4       |

OR

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PH.380.603</td>
<td>Demographic Methods for Public Health</td>
<td>4</td>
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Competency 3 (Choose 1):

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PH.380.623</td>
<td>Adolescent Health and Development</td>
<td>3</td>
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OR

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PH.380.747</td>
<td>International Adolescent Health</td>
<td>3</td>
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Competency 4 (Choose 1):

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PH.380.624</td>
<td>Maternal and Child Health Legislation and Programs</td>
<td>4</td>
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OR

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PH.380.665</td>
<td>Family Planning Policies and Programs</td>
<td>4</td>
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**Child Health Area of Interest**

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
</table>
| Competency 1:
| PH.380.604 | Life Course Perspectives on Health         | 4       |
| Competency 2 (Choose 1):
| PH.380.600 | Principles of Population Change            | 4       |

OR

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH.380.603</td>
<td>Demographic Methods for Public Health</td>
<td>4</td>
</tr>
</tbody>
</table>
Population, Family and Reproductive Health, MHS

Competency 3 (Choose 1):
PH.380.616 Child Health Epidemiology 3
OR
PH.380.765 Preventing Infant Mortality and Promoting the Health of Women, Infants and Children 3
OR
PH.380.623 Adolescent Health and Development 3
Competency 4 (Choose 1):
PH.380.624 Maternal and Child Health Legislation and Programs 4
OR
PH.380.661 Clinical Aspects of Maternal and Newborn Health 3
Competency 5 (Choose 1):
PH.380.664 Reproductive and Perinatal Epidemiology 4
OR
PH.380.385 Preventing Infant Mortality and Promoting the Health of Women, Infants and Children 3
OR
PH.221.627 Issues in the Reduction of Maternal and Neonatal Mortality in Low income Countries 4

Maternal and Child Health Area of Interest

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competency 1: PH.380.604</td>
<td>Life Course Perspectives on Health</td>
<td>4</td>
</tr>
</tbody>
</table>

Competency 2 (Choose 1):
PH.380.600 Principles of Population Change 4
OR
PH.380.603 Demographic Methods for Public Health 4
Competency 3 (Choose 1):
PH.380.664 Reproductive and Perinatal Epidemiology 4
OR
PH.380.616 Child Health Epidemiology 3
OR
PH.380.765 Preventing Infant Mortality and Promoting the Health of Women, Infants and Children 3
Competency 5 (Choose 1):
PH.380.642 Child Health and Development 3
OR
PH.380.744 Nutrition and Growth in Maternal and Child Health 3
OR
PH.380.623 Adolescent Health and Development 3
OR
PH.380.747 International Adolescent Health 3
OR
PH.380.725 The Social Context of Adolescent Health and Development 3

Competency 3 (Choose 1):

Women's Sexual and Reproductive Health Area of Interest

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Competency 1: PH.380.604</td>
<td>Life Course Perspectives on Health</td>
<td>4</td>
</tr>
</tbody>
</table>

Competency 2 (Choose 1):
PH.380.600 Principles of Population Change 4
OR
PH.380.603 Demographic Methods for Public Health 4
Competency 3 (Choose 1):
PH.380.664 Reproductive and Perinatal Epidemiology 4
OR
PH.380.666 Women's Health 3
Competency 4 (Choose 1):
PH.380.665 Family Planning Policies and Programs 4
OR
PH.380.771 Understanding and Changing International Reproductive Health Policy 3
OR
PH.380.667 Women's Health Policy 3
OR
PH.380.768 Selected Topics in Women's Health and Women's Health Policy 4
OR
PH.380.760 Clinical Aspects of Reproductive Health 3
Competency 5 (Choose 1):
PH.380.655 Social and Economic Aspects of Human Fertility 3
OR
PH.380.668 International Perspectives on Women, Gender, and Health 3

MHS Essay and Presentation Guidelines

The Master's Essay is a requirement for graduation from the MHS program in the Department of Population, Family, and Reproductive Health. The goal of the essay is for students to apply the skills and
knowledge they have acquired during their academic program to a public health problem or concern of interest to them; a priority for the essay is that it has a research focus even if it does not involve data analysis. In addition to the written essay, students must give a 10-minute public presentation of their essay.

Students should begin thinking about essay topics and format at the end of the first term.

During Terms 3 and 4 of their studies, students will register for PFRH Master’s Essay (380.850), designating their first reader as the instructor. Guidelines for credit hours are as follows:
- Term 3: 3-6 credits
- Term 4: 3-5 credits
- Students need to take a minimum of 3 credits of special studies each term for the essay
- If taking more than 3 credits student must meet weekly with 1st reader

The following sections provide detailed guidelines about the essay and presentation.

Essay Readers
Students must have at least one reader for their essay. The following guidelines must be applied:
- The students’ reader must be PRFH faculty; faculty with a joint appointment in PFRH can be a reader.
- If a student wishes to select a reader who is not PRFH faculty, then a second reader from PFRH must also be selected.

Responsibilities of Students and Readers

Primary Reader
The essay reader has the overall responsibility of working with the student on the essay from the outline to final draft, and on preparation for the presentation. They must be identified as the instructor for the special studies course for the PFRH Master’s Essay (380.850) in the 3rd and 4th terms. Students must submit outline and essay drafts to the primary reader on key dates starting in November through April; these dates are indicated to assure timely completion of the essay.

Second Reader
A second reader may also provide comments on the essay at any stage. A second reader will seldom be needed but may be asked if a student is using data from a study conducted by the reader or at the agency of the reader. If a second reader is external to the department, students are strongly advised to discuss the roles and responsibilities of this reader with their primary reader. Second readers do not give approval for the essay, unless the first reader is external to PFRH.

The essay must meet the standards required by faculty of the School. However, student who are using data affiliated with the second reader or the second reader’s agency should provide drafts of the essay to this reader and discuss when feedback will be given to the student from the reader.

Choosing a Topic and Format for the Essay
In addition to selecting a topic and readers, students select one of five formats for the essay:
- Research Report
- Analysis of a Public Health Problem or Legislation Position Paper
- Structured Literature Review
- Evaluation of a Program/Project
- Research Proposal

Given the research/academic focus of MHS degree, the essay should include data to support the topic even if it is not a research report. Students may a public health concern or problem which may or may not be in their area of interest.

The student and their adviser must verify the knowledge and skills required for the selected essay format (see Essay Topic Form); for example, students conducting a systematic literature review for their essay must have taken a related course or work with a primary reader with methodological expertise in systematic reviews.

Steps to Complete the Essay

Step 1: Identify topic, format, and readers
Students should identify a reader whose research interests and expertise are in the topic area or methodology for the essay. Advisers are as a useful resource for discussing potential topics of interest and providing referrals to other faculty members in the department whose expertise may better match the proposed topic of the essay. Other resources for identifying potential readers are the Master’s Director, academic coordinators and PFRH website.

Step 2: Discuss roles and responsibilities with readers
Once readers have been identified, all students should have a conversation with their readers so that each knows their responsibility for the essay. This discussion is especially important for readers outside PFRH and especially for third readers. A timeline should also be provided to the readers so that each is aware of when feedback should be provided. In general, readers should be given at least a minimum of one week to provide feedback to students. While not required, the student and readers also discuss plans to publish the essay and the order of authors for the publication. Separate guidelines regarding authorship will be provided to the students.

Step 3: Determine Whether Essay Involves ‘Human Subjects Research’
What is ‘human subjects research’?

“Human subjects research” is broadly defined to include any activity involving humans that seeks to test a hypothesis or answer a scientific question. This activity can include secondary data analysis and research involving direct contact with participants. All students who plan to undertake human subjects’ research must have IRB approval before working with human subjects’ data or samples and before contacting human subjects if undertaking primary data collection. The BSPH IRB Office (publichealth.jhu.edu/offices-and-services/institutional-review-board-irb) is charged with assuring that human subjects...
research studies conducted in the School comply with internal school policies and external regulations designed to protect human subjects.

After students have identified the data source(s) for research for their essay, they should complete the online IRB Worksheet (http://jhsph.us2.qualtrics.com/SE/?SID=SV_10F6WBUCNFZCV6) to determine additional steps (if any) needed for securing IRB approval for the essay, or documenting existing approval.

For additional questions about the IRB process, please visit: http://publichealth.jhu.edu/offices-and-services/institutional-review-board-irb/policies-and-guidance (http://publichealth.jhu.edu/offices-and-services/institutional-review-board-irb/policies-and-guidance/)

Step 4: Submit the Essay Topic Form
After students have selected an essay topic and format, the Essay Topic Form (https://courseplus.jhu.edu/core/index.cfm/go/olibrary.viewAll/oid/7100/) must be completed and signed by the student, academic adviser, and primary reader (if different from the adviser). This form will ensure that a student has the needed skills and knowledge to complete the essay. For example, if a student decides to conduct or propose an evaluation of a project or program for the essay, they must have either taken the 'Fundamentals of Program Evaluation' course or equivalent or had prior experience conducting an evaluation (formats listed under "MSPH Essay and Presentation Guidelines" section). Students also must indicate whether IRB approval is needed for the essay.

Step 5: Register for 380.850 PFRH Master's Essay
Students should register for 3 to 6 credits with their reader using course number 380.850 in the 7th term and 3 to 5 credits in the 8th term. The number of credits is dependent on the amount of time students think they will spend on data collection, analysis, and writing during each term. Each credit is equivalent to approximately 3 hours of work per week.

Step 6: Submit Outline of Essay to Essay Reader
Students must submit an outline of the essay to the primary reader by the required deadline. The outline should contain all major headings and sub-headings of the specific essay format, with bulleted text on the content of each section. Primary readers must be given at least 1 week for feedback.

Step 7: Submit First Draft of Essay to Essay Reader
Students must submit a complete draft of their essay to the reader by the 2nd week of the term in which the essay is to be completed. The reader should ensure that the draft contains all necessary elements of the essay in the standardized format and provide feedback to the student within 2 weeks of receiving the draft essay.

Step 8: Submit Second Draft of Essay to Readers
Second drafts must be submitted to both the primary (and second readers if needed) for final edits and recommendations by the required deadline. Readers should provide feedback to the student within 2 weeks of receiving the second draft. Students should submit a second draft that is of reasonable quality so that faculty can complete their review and provide comments in a timely manner. Students must incorporate comments from each reader in their final draft.

Step 9: Submit Final Draft of Paper to Primary and Secondary Readers for Approval
Students must submit the final draft of their essay to their reader for approval and submission to the PFRH Academic Office. The readers must also submit the Reader Approval Form for the essay directly to the Office. If the reader is not from PFRH, then the second reader from PFRH must also sign the form. If the essay is not approved by the reader by the deadline, students may not be able to participate in the oral presentation and may be in jeopardy of not graduating on time. The reader may nominate the student's essay for a distinction award if the quality of the essay is deemed to be excellent. The essay must be completed by the required deadline to be nominated.

Step 10: Oral Presentation of Essay
Each student is required to present their essay in a 10-minute PowerPoint presentation at a public seminar before the end of the 4th term. The student's adviser is expected to review draft presentations prior to a practice session. A practice session will be scheduled approximately one week prior to the public seminar with input from doctoral students in the department. No video clips are allowed in the presentation.

Before students can present their essay, they must meet these conditions:

- Any existing incompletes in coursework must be rectified, with confirmation by the student's adviser and academic coordinator.
- The essay has received final approval from first and second readers, and prior experience conducting an evaluation (formats listed under "MSPH Essay and Presentation Guidelines" section).
- All slides have been approved by the primary reader.

Failure to meet any of these conditions before the time of presentation will result in postponement of graduation.

Master's Essay Deadlines
In preparation for completion of the MHS essay and presentation, students should contact their adviser and/or their primary reader no later than the 2nd term to discuss the essay topic and format of interest to them. MHS Essays are due early in the 4th term. Students should begin work on their paper no later than the start of 3rd term, preferably before the term begins, and complete it early in the 4th term. Students should begin to consider essay topics and format early in the 2nd term. Essays will be presented at a public seminar in May, prior to graduation.

General Guidelines for All Essay Formats
The essay should be between 15-20 pages in length, excluding the title page, acknowledgements, tables, references/bibliography, and appendices.

All essays should have a title page including: the title, student's name, readers (identifying the adviser), and date. Please see the template included in the Appendices section at the end of the handbook. Students may include an acknowledgments page (does not count toward the total).

Typing guidelines:

- Standard letter size paper 8½ by 11
- Double spaced/single sided (can single space block quotations)
- Type size no smaller than 11 pt.
- 1-inch margins all around
- Page numbering: title page, acknowledgments, etc., usually not numbered. Others numbered consecutively to the end of the paper
- Consistent format for all tables, figures, headings, and end notes and/or bibliography materials

Use APA or AMA format for references; see http://www.apastyle.org/ and http://www.amamanualofstyle.com/.
Essay Formats

The following are specific guidelines for each essay format. If a student prefers a format different from those specified below, they will need approval by their adviser and the Director of the Master's Program.

Research Report
This format could be based on secondary data analysis (more typical) or primary data collection and analysis. IRB approval is needed for this format. The sections in this essay format are as follows:

- Structured abstract (1 page maximum)
  - Should include the following headings: Background, Objective(s) of study, Methods, Results, Conclusions
- Introduction (1 to 3 pages)
  - Importance of public health concern/problem
  - The magnitude of problem and population affected
  - Knowledge gaps and how the current study fills the gaps
- Methods (2 to 4 pages) See Methods Section below
  - Study design
  - Sample/participants
  - Data Sources
  - Measures/Topics [for quantitative analyses, include variable tables that specifies variables and how they are operationalized (e.g., categorical, ordinal, interval); for qualitative analyses, include table with domains and sample questions]
  - Data analysis
- Results
- Discussion with Limitations and Implications for public health practice
- References
- Tables/figures

Analysis of a Public Health Problem or Legislation Position Paper:
Both formats examine a public health problem and recommend either a specific intervention strategy or policy/policies for addressing the problem. The analysis of a public health problem format offers solutions and recommendations related to intervention strategies, while a legislation position paper offers solutions and recommendations related to a policy or a set of policies. Both formats also identify concerns of key stakeholders. The sections in this essay format are as follows:

- Executive summary (2-3 pages) [Should include an Introduction and overview of public health problem and a brief discussion about how the problem could be addressed.]
- Statement of the problem (1 page)
- Magnitude of problem (1-2 pages)
- Causes/determinants of the problem (3-5 pages)
- Alternative policy strategies; and may also include an evaluation of a current policy and its impact along with the discussion of alternative policy strategies (4-6 pages)
- Specific recommendations (2-4 pages)

Structured Literature Review
This format analyzes an important public health problem by examining the empirical literature published on the problem. The sections in this essay format are as follows:

- Structured abstract (1 page maximum)
  - Should include the following headings: Background, Objective(s) of review, Methods, Results, Conclusions
- Introduction (1 to 3 pages)
  - Why is the topic an important public health problem?
  - What is the magnitude of problem and population affected?
  - What are the knowledge gaps and how does the current literature review contribute to field or fill the gaps?
- Methods (1 to 3 pages) See Methods Section below
  - Databases used
  - Search criteria
  - Analytic tables describing literature cited
- Results (3 to 6 pages)
- Discussion (3 to 5 pages)
- References
- Tables/figures

Evaluation of a Program/Project
This format involves evaluating/monitoring an existing public health program/project and could include a process, outcome, or impact evaluation. It may also be a proposed evaluation with additional details on the planned design and hypotheses to substitute for results. The sections in this essay format are as follows:

- Introduction (1 to 2 pages)
- Description of program/project (1 to 3 pages)
  - Need (what is the public health problem the program/project is trying to address?)
  - Target audiences (what are the groups/individuals who are targeted for the program/project?)
- Activities of program/project
- Objectives of program/project (1 page)
- Logic Model of program/project (1 page)
- Evaluation Methodology (3 to 6 pages) See Methods Section below
  - Type of evaluation
  - Indicators
  - Data collection methods
  - Sampling strategy and sample size
  - Data analysis
- Anticipated use of results (2 to 5 pages)
- Timetable if proposed project (1 page)

Research Proposal
This essay format simulates a grant proposal for a research project. The sections in this essay format are as follows:

- Introduction (1 page)
- Statement of research question (1/2 page)
- Specific aims (1 page) o Background and significance (2-3 pages) o Methods (6-8 pages): Study design; Sampling/participants/sample size; Data Sources and variables; Methods of Analysis
- Strengths and Limitations (1 page)
- Budget and budget justification (1-2 pages)

Methods Section for Research Report, Structured Literature Review and Evaluation Formats
The information included in the Methods section should provide enough detail to the reader so that the quality of the study design, sampling methods, data sources, and measures can be clearly evaluated, even if the methods have been reported elsewhere. If the maximum essay length of 20 pages does not permit this level of detail, then students are encouraged to include an appendix describing additional details about the study methods. This appendix should be a supplement and not duplicate material already found in the body of the essay. Referring the reader to previous publications about the methods is not adequate.

**Evaluation Criteria for MHS Essay Readers**

- The student demonstrates the ability to successfully complete a cohesive and acceptable essay in the timeframe provided applying public health knowledge and skills.
- The student demonstrates the ability to make appropriate inference(s) and draw logical conclusion(s) to inform the field of public health.
- The essay is suitable for publication as a peer-reviewed journal or an organization/government report or is deemed of publishable quality.

**Honors**

Student essays that demonstrate excellence, as indicated by both the primary and secondary readers, can be nominated for an honorary ‘distinction’ award if the essay submission deadline is met. Nominations will be accepted from the primary reader. Student essays that receive a distinction award will be selected by the masters committee.

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**All PFRH MHS students must attain proficiency in the following three (3) competencies:**

1. Applying statistical methods to address the health of populations.
2. Applying epidemiological methods to address the health of populations.
3. Applying ethical concepts and tools to population health research and practice.

**Degree Program Competencies**

All PFRH MHS students must attain proficiency in three MHS-specific research competencies:

1. Evaluating and applying study designs for addressing research and evaluation questions about the health of populations.
2. Evaluating and applying rigorous strategies for measurement and data collection across a range of study designs.
3. Translating and communicating research findings to researchers, policy makers, and the public.

**Area of Interest Competencies**

All PFRH MHS students must attain proficiency in five competencies:

1. Applying a life course framework to understand population health problems related to their area of interest, including multiple determinants framework for the health of populations across the life course.
2. Identifying and assessing the causes and consequences of population change using demographic methods.
3. Assessing the principal health concerns for the populations relevant to the area of interest, the associated population-based risk factors, and the relative impact of each risk factor.
4. Evaluating strategies to promote population health, including health services and systems delivery strategies used to address health concerns in the relevant populations.
5. Applying frameworks specific to the area of interest (beyond life course) for improving the health of the relevant populations.

**CEPH Learning Objectives**

All PFRH MHS students must attain proficiency in twelve CEPH Learning Objectives:

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