MASTER OF SCIENCE
in
PUBLIC HEALTH SCIENCES

HANDBOOK FOR FACULTY AND STUDENTS
PENNSYLVANIA STATE UNIVERSITY
COLLEGE OF MEDICINE
HERSHEY, PENNSYLVANIA
I. INTRODUCTION

This handbook serves as an aid to faculty and graduate students in the Master of Science (MS) Graduate Program in Public Health Sciences (PHS). Information and degree requirements for Penn State University MS Program in PHS and timeline for completing the program are provided. Additional University requirements can be found in Penn State University Graduate Programs Bulletin (www.psu.edu/bulletins/whitebook). Both students and faculty are encouraged to consult the bulletin for additional information.

A. Degree Program

One of the degree programs offered by PHS at the Penn State University College of Medicine is the MS degree. The objective of the program is to educate and train students to demonstrate excellence in scholarship and scientific understanding in the disciplines of biostatistics, epidemiology, and health services research. The MS PHS degree can lead to careers in a wide variety of fields and settings, including academic health centers; the health insurance industry; health services networks; local, state, and federal government agencies; and the pharmaceutical industry. The degree requires a Master's thesis and one oral presentation of the original research.

B. Goals of Graduate Education in PHS

The mission of the Department of Public Health Sciences at Penn State University College of Medicine is to advance health science through the (1) design, conduct, and analysis of population-based biomedical research, (2) support of basic science and clinical research, and (3) education of future generations of health professionals. The mission of the Graduate Program in PHS is to fulfill the third arm of the departmental mission. The graduate program is directed toward students who plan to pursue an MS degree. Completion of the degree indicates that the student will have (1) mastered knowledge in the disciplines of biostatistics, epidemiology and health services research that is necessary to perform in a professional, academic, or corporate setting, (2) demonstrated ability to read, write, and evaluate scientific literature, and (3) demonstrated a work ethic that supports scholarship and promotes the highest standards of academic integrity.

C. Scientific Research Interests

Prospective students are asked to indicate a scientific research interest in order to complete the application for admission into the graduate program.

D. Transfer Credit

Students are allowed to transfer up to 10 credits from an external graduate program to fulfill the 27 credit course requirements for the PHS graduate program. Instructors will review the syllabus for the equivalent courses to determine their eligibility for transfer.

Students are allowed to transfer up to 15 Penn State credits obtained within the specific coursework guidelines specified in the PHS curriculum: http://www2.med.psu.edu/phs/graduate-programs/master-of-science-in-public-health-sciences-program-ms-phs/curriculum/.
Students who wish to transfer from the MPH degree to the MS degree must complete the “Change of Graduate Degree or Major” form and be reviewed as a new applicant to the MS program. Up to 15 credits can be transferred from the MPH to the MS degree.

II. ADVISORS & MENTORS

A. Faculty Advisors

Each student in the MS PHS Program is assigned an academic advisor upon admission to the program according to the specific interest that the student indicated on the application form. The role of the academic advisor is as a point of contact for the student as regards course selection and to help the student with any academic questions or concerns that might arise. Both the student and the advisor are invited to consult with the Graduate Program Director about any issues related to the student's graduate education experience. Students are also encouraged to talk with their course instructors about areas of research interest.

Once the student has identified an area of interest for his/her thesis topic, a thesis advisor will be identified to replace the academic advisor as the primary point of contact and to provide academic guidance for the student in regards to completion of the required thesis experience. The academic advisor may become the thesis advisor if so desired. The thesis advisor must be identified prior to the student filing the intent to graduate at the beginning of the final semester, but a student who plans to graduate in the spring semester of the second year is strongly encouraged to have a thesis advisor in place by the end of the spring semester of the first year.

Students and advisors are required to meet in person at least once at the beginning of the first semester and decide on a schedule of regular meetings during the first year. Students and advisors may meet or communicate informally by email at any time. Each formal meeting must be tracked using the MS checklist (see Appendix 1).

The program is designed to be completed in 2 years beginning in the fall semester and concluding at the end of the spring semester of the second year. The typical course sequence is outlined below. Milestones for identifying an area of interest, finding the thesis advisor, and completing the Master’s Thesis can be determined by referring to the attached timeline document (see Appendix II).

Students planning to graduate in the spring must electronically file their intent to graduate with the Graduate School during January. The Master’s Thesis must be written and submitted according to the deadlines outlined by the graduate school at http://www.gradsch.psu.edu/current/thesis.html. The Graduate School, the University Libraries, and the graduate faculty of Penn State have established format standards that a thesis must meet before receiving final approval as fulfillment of a graduate requirement. The Thesis Office is the unit of the Graduate School responsible for certifying that the thesis has been prepared in accordance with these established regulations.

A committee of 3 or more PHS graduate faculty must be selected for a Master’s Committee whose primary responsibility is a review of the Master’s thesis.

The representative timeline for students entering the MS PHS Program and desiring to complete the degree in two years is as follows and in Appendix I:

First year:
- Meet with the academic advisor early in the fall semester to become oriented to the program and establish expectations for coursework during the first year. First year coursework is sequential and does not require electives.
• Meet with the academic advisor early in the spring semester to review academic performance during the fall semester and discuss emerging areas of research interest.
• Meet with the academic advisor at the end of the spring semester to review academic performance during the first year and discuss developing areas of research interest.
  o If the student has not yet determined a general area of research interest by the end of the spring semester, then the student and advisor should develop a strategy for identifying an area of research interest during the summer prior to the fall semester of the second year. Either the advisor or the student may wish to invite the Program Director to facilitate the process. The academic advisor is not expected to identify the specific research topic for the student.
  o If the student has determined a specific research topic, then the advisor and student should work together to identify the thesis advisor as soon as possible so that the student can begin to develop the research project during the summer.
  o If the student has determined a general area of interest, but not a specific topic, then the academic advisor should facilitate the student meeting with other PHS faculty members having similar research interests.
  o Identify a thesis advisor

Second year:
• Meet with the thesis advisor after he/she has been identified, prior to the beginning of the fall semester to choose elective courses for the second year. (There are no elective courses during the first year.)
• Meet with the thesis advisor no later than the end of September to establish a timeline for mapping out the research project with the goal of presenting the project proposal by early December and completing the project by the end of March.
• From this point forward the student and thesis advisor should stay in close contact, perhaps meeting on a regular bi-weekly or monthly basis, until the research project is completed.

If no area of research interest has been identified prior to the end of the spring semester of the first year, then the student will meet with the academic advisor and Program Director to establish a plan for identifying a research project and selecting a thesis advisor. If no thesis advisor and research project has been identified by the start of the fall semester of the second year, the situation will be addressed by the academic advisor in cooperation with the MS Program Committee (MSPC) with the goal of finding a remedy. If necessary, the MSPC may advise the student to withdraw or take a leave of absence from the program to contemplate his/her academic and professional goals.

If a student enters the PHS Program intending to complete the degree in more than two years, then the above timeline should be followed working backwards from the intended graduation date.

If a student enters the PHS Program with more than 6 credits already completed and desires to graduate in less than two years, and if the thesis advisor has not already been identified, then the academic advisor should begin working with the student immediately to identify a specific research topic and thesis advisor.

B. Advisors and Committees

Upon entering the program, each MS PHS candidate is assigned an academic advisor from the PHS faculty. By the end of the first semester of study, you must select a thesis advisor from among the department faculty. This person can be the individual who served as your academic advisor or it can be another faculty member. You should contact the faculty member directly to ask if he/she is willing to act as your thesis advisor. Also, by the end of the first semester, you should decide on your field of concentration.
In your second semester, it is time to establish your MS thesis committee. This is a three-person committee consisting of your thesis advisor, one additional faculty member selected in consultation with your thesis advisor, and the chair of the PHS department or MS Program Director. You should contact the additional faculty member directly to ask if he/she is willing to serve on your committee. During your time as a student, you should consult with your advisors and committee on a regular basis regarding your program of study and completion of the Master’s thesis.

Thesis Advisors

The role of the thesis advisor is to provide academic guidance for the student in regards to completion of the required Master’s thesis. Either the thesis advisor or the student may request involvement of the Program Director at any time if there are concerns about the progress of the research project. The thesis advisor must attend the final project presentation.

The relationship between the student and the thesis advisor is intended to be one of mentorship. Although it is generally permissible for the student’s Master’s thesis to entail some particular aspect of the advisor’s research program, the student is not expected to act as the advisor’s research assistant.

Thesis Committee

The thesis committee consists of three (3) or more members of the Graduate Faculty of Penn State University and includes at least two (2) members from the Graduate Faculty in PHS. The Chair of the committee must be a member of the Graduate Faculty in PHS, and represent the same field of research.

The responsibilities of the thesis committee are to provide general guidance for the student and to insure successful completion of the thesis research. Students will prepare a thesis proposal for their committee’s review prior to beginning research (ideally spring semester of the first year or early fall semester of the second year). The committee will meet again at the beginning of the spring semester of the second year to assess the progress of the research and, ultimately, approve the final Master’s thesis.

III. ACADEMIC REQUIREMENTS

A. Requirements for Master’s Degree

Each student in Public Health Sciences is expected to acquire breadth of knowledge in the disciplines of Biostatistics, Epidemiology, and Health Services Research, and skills in the areas of experimental design, data collection and quantitative analysis. Each student must complete at least 30 credits, including 6 thesis research credits and 24 credits of formal course work at the 500 level. Each student must submit an original Master’s thesis according to guidelines outlined by the Graduate School at http://www.gradsch.psu.edu/current/thesis.html.

B. Courses

The 24 credits of formal coursework required in the PHS Program consist of 18 credits of 500 level required courses, plus 6 credits of 500 level electives. A total of 6 Thesis Research credits must also be obtained. The total of PHS 594 Research Topics, PHS 596 Individual Study and PHS 600 Research Topics cannot exceed 6 credits maximum.
Required courses include:

- **Biostatistics (7):**
  - PHS 520 – Principles of Biostatistics (3 credits)
  - PHS 521 – Applied Biostatistics (3 credits)
  - PHS 597B – Statistical Computing Using SAS (1 credit)

- **Epidemiology (6):**
  - PHS 550 – Principles of Epidemiology (3 credits)
  - PHS 551 – Advanced Epidemiology (3 credits)

- **Health Services Research (4):**
  - PHS 597C – Principles of Health Services Research (1 credit)
  - PHS 536 – Health Survey Research Methods (3 credits)

- PHS 500 - Research Ethics (1 credit)

- PHS 600 – Thesis Research (6 credits)

Elective courses include:

- **Biostatistics:**
  - PHS 522 – Multivariate Biostatistics (3 credits)
  - PHS 580 – Clinical Trials: Design and Analysis (3 credits)
  - PHS 801 – Data Management (1 credit)

- **Epidemiology:**
  - PHS 552 – Molecular Epidemiology of Chronic Disease (3 credits)
  - PHS 553 – Infectious Disease Epidemiology

- **Health Services Research:**
  - PHS 535 – Quality of Care Measurement (3 credits)
  - PHS 540 – Decision Analysis
  - PHS 570 – Health Economics and Economic Evaluation (3 credits)

- **Clinical Research:**
  - PHS 511 – Methods Used in Translational Research (1 credit)
  - PHS 518 – Scientific Communication (2 credits)

Courses in Health Policy and Administration (HPA) and Statistics (STAT) may be taken as elective courses and will be considered on an individual basis in consultation with the student's academic advisor.

**Representative schedule of courses (credits) for years 1 and 2 (required courses in BOLD):**

**Year 1**

- **Fall (8)**
  - PHS 520 (3) Principles of Biostatistics
  - PHS 550 (3) Principles of Epidemiology
  - PHS 597B(1) Statistical Computing Using SAS
o PHS 597C (1) Principles of Health Services Research

• Spring (7)
  o PHS 521 (3) Applied Biostatistics
  o PHS 551 (3) Advanced Epidemiology Methods
  o PHS 500 (1) Research Ethics

15 credits for Clinical Research Certificate OR go on to Year 2

• Summer (optional) (1-5)
  o PHS 801 (1) Data Management
  o PHS 511 (1) Methods Used in Translational Research
  o PHS 522 (3) Multivariate Biostatistics

Year 2
• Fall (6-9) One required, one or two 3-credit electives
  o PHS 518 (2) Scientific Communication
  o PHS 552 (3) Molecular Epidemiology of Chronic Disease
  o PHS 570 (3) Health Economics
  o PHS 580 (3) Clinical Trials
  o PHS 600 (3) Thesis Research

• Spring (6-9) Two required courses, one elective if needed
  o PHS 536 (3) Health Survey Methods
  o PHS 600 (3) Thesis Research
  o PHS 535 (3) Quality of Care Measurement
  o PHS 540 (1) Decision Analysis

Research Ethics (PHS 500) must be taken in spring semester in the first year. Additionally, Penn State Hershey graduate students are required to complete an online training course about Human Subjects Protection provided by CITI (Collaborative Institutional Training Initiative). Each student must complete the CITI course and provide the program administrator with a copy of the completion certificate before the end of the spring semester. Links to the CITI training are provided in your Angel (Course Management System) account.

Thesis Research can be taken in two 3-credit increments during the final two semesters, or 6 credits in the final semester.

• Course and Instructor Evaluations

At the end of every semester you will receive an announcement via email to login to Course Eval to complete instructor and course evaluations. This is a completely anonymous evaluation but the system tracks whether or not you complete the task. Students who do not complete their assigned course evaluations in the time frame allowed will not receive a grade for the semester.
C. Transfer Credit

Students are allowed to transfer a maximum of 10 credits of high quality graduate work from a regionally accredited institution to fulfill the 27 credit course requirements for the PHS graduate program. Instructors will review the syllabus for the equivalent courses to determine their eligibility for transfer.

Students are allowed to transfer up to 15 graduate credits from Penn State obtained within the specific coursework guidelines specified in the PHS curriculum at http://pennstatehershey.org/web/phs/programs/graduate/curriculum/courseinformation.

Students who wish to transfer from the MPH degree to the MS degree must complete the “Change of Graduate Degree or Major” form and be reviewed as a new applicant to the MS program. Up to 15 credits can be transferred from the MPH to the MS degree.

D. Master’s Thesis

An original Master’s Thesis is required for completion of the Master of Science degree. Details about the Master’s Thesis requirements are at http://www.gradsch.psu.edu/current/thesis.html. In addition to the written component, students are expected to give one (1) oral presentation of their research. The presentation should occur at the conclusion of the research project and be scheduled during the thesis office review. All faculty and students will be invited to attend these presentations. Students should determine the scheduling of these presentations in cooperation with their thesis advisor. The presentation will not be formally evaluated and should include visual aids, such as a PowerPoint presentation, and be 20 to 25 minutes in length.

Every thesis must be reviewed for format only and is not edited by the thesis office for spelling, grammar, or punctuation.

When a thesis is submitted to the Thesis Office, it must meet the formatting and deadline requirements set forth in the latest edition of the Thesis Guide. All master’s theses must be submitted electronically. For more information on electronic thesis (eTDs) submissions, visit the eTD Web site: http://www.etd.psu.edu/. You must also send your final thesis by email to the program administrator.

E. Grade-Point Average/Unsatisfactory Scholarship

A minimum grade-point average of 3.0 for all course work is required to fulfill the graduation requirements. One or more failing grades or a cumulative grade-point average below 3.0 may be considered evidence of unsatisfactory scholarship and be grounds for dismissal from the University [see the Graduate Programs Bulletin].

If, for reasons beyond the student’s control, a student is prevented from completing a course within the prescribed time, the grade in that course may be deferred with the concurrence of the instructor.

The period during which a grade may be deferred shall not extend, without further approval of the dean of the college, beyond the end of the sixth week of the next semester in which the University is in session. A deferred grade that is not changed to a passing grade by the instructor before the end of this period automatically becomes an F.

IV. MS PROGRAM COMMITTEE

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The MS program in PHS is governed by the MS Program Committee (MSPC). The MSPC shall consist of the Graduate Program Director and four other faculty members with primary or joint appointments in the Department of PHS. Members, other than the Director, will serve two year terms and may be reappointed or replaced by the PHS Chair at any time. The MSPC shall include at least one faculty representative from each of the PHS divisions, Biostatistics, Epidemiology, and Health Services Research.
Appendix I. MS PHS TIMELINE

- **SPRING 1**
  - **DECEMBER**: Register for required courses
  - **MARCH**: Create thesis topic
  - **AUGUST**: Meet with academic advisor

- **SUMMER**
  - **APRIL**: Register for elective courses

- **FALL 2**
  - **AUGUST**: Register for required and elective courses
  - **MARCH**: Meet with thesis committee
  - **FEBRUARY**: Schedule presentation for spring
  - **MARCH**: Submit thesis for review in thesis office

- **SPRING 2**
  - **FEBRUARY**: Submit thesis to Graduate Academic Calendar
  - **MAY**: Graduation

- **DECEMBER**: Submit final thesis
Appendix II. Important Links

http://schedule.psu.edu/

https://elion.psu.edu/

https://cms.psu.edu/default.asp (ANGEL)

www.registrar.psu.edu/academic_calendar/calendar_index.cfm

www.gradsch.psu.edu/current/thesis.html
Appendix III. GRADUATE FACULTY IN PHS

Appointment of Faculty

Candidates for appointment to the Graduate Faculty in the PHS Program must submit the following to the MSPC:

- Curriculum vitae
- Statement of anticipated responsibilities as a member

The committee will review the candidate’s application by the following criteria:

- Ability to teach in applicable courses
- Ability to advise graduate students
- Ability to conduct research and scholarly activity in Public Health Sciences

Candidates approved by the MSPC will be assisted in completing relevant applications to be forwarded to the College of Medicine Graduate Faculty Evaluation Committee.

Graduate Faculty members in PHS are expected to:

- participate in teaching of graduate courses in PHS
- serve as academic advisors and thesis advisors
- serve on Master’s committees as needed

New tenure-track faculty, who have not yet achieved Graduate Faculty status, may be asked to teach courses and to serve as academic advisors. These activities will strengthen the faculty member’s application for appointment to the Graduate Faculty.