PHD IN GLOBAL HEALTH:
METRICS AND IMPLEMENTATION SCIENCE
STUDENT HANDBOOK
2016-2017

PROGRAM OVERVIEW

The new PhD program in Global Health builds on the expertise of our faculty in the areas of Metrics and Implementation Science. This unique, interdisciplinary program is comprised of a core curriculum in advanced quantitative methods, epidemiology, population health measurement, impact evaluations and implementation science methods. Students develop skills through a combination of didactic courses, seminars and research activities including primary data collection and analysis. This program trains global health researchers for careers in academic institutions, international organizations, Ministries of Health, foundations, and the private sector.

Program website: http://globalhealth.washington.edu/phd

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SECTION 1: GENERAL INFORMATION

PHD PROGRAM COMMITTEE FACULTY

For a list of all PhD program faculty, contact information and research interests, please visit: http://globalhealth.washington.edu/faculty

RESEARCH ASSISTANTSHIPS AND TEACHING ASSISTANTSHIPS

Teaching assistant (TA) and research assistant (RA) positions are available through various departments in the University. All TA appointments and most RA appointments are union positions (with a few exceptions, such as the GSFEI first-year no-service RA appointments) and are governed by the UW/UAW contract. Information about the contract is available from the Academic Student Employees (ASE) web site, located at: http://www.washington.edu/admin/hr/laborrel/contracts/uaw/addons/

Some of these Graduate Student Service Appointment (GSSA) positions are posted on the UW Human Resources web site. To view current employment listings, visit the UW employment web page at http://www.washington.edu/admin/hr/jobs/ and choose "Student Employment" from the menu.

All students will be offered research and teaching assistant positions upon admittance to the program. This will provide students with full funding for their coursework, as well as practical experience in conducting research and evaluation. Please feel free to speak to faculty and the program manager about possibilities.

RESIDENCE RECLASSIFICATION

Even if your tuition is being paid by a grant or fellowship, it's important to establish Washington residency as soon as you qualify. This ensures that you will be eligible for resident tuition rates and may represent a cost saving to grant sponsors.

Out-of-state students should begin the process to qualify for re-classification as a Washington State resident as soon as possible upon their arrival on campus. (This does not apply to foreign nationals here on a student visa.) Please review the Washington State Residency information at https://registrar.washington.edu/students/residency/. Key items are a Washington state driver's license or identification card and vehicle registration (if you drive) in Washington. Registering to vote in Washington State is also crucial, as is establishment of a bank account in Washington.

Although the residency web page states that students must prove that they have come to Washington "primarily for purposes other than educational," the UW approved a waiver for graduate and professional students discussed at: https://registrar.washington.edu/students/residency/graduate-and-professional-students/.

TUITION WAIVERS

There are different classes of tuition waivers at the University of Washington. Below is an explanation of these tuition waivers, plus associated forms of student support, and how they are administered.

1. **UW* Teaching Assistantships and Research Assistantships .50 FTE**
   You must be enrolled for at least ten credits (two credits in summer quarter) to receive a graduate tuition waiver. RAs and TAs AUTOMATICALLY receive these benefits:

a. Resident Operating Fee Waiver (most of resident tuition)

b. An exemption from the non-resident differential portion of tuition (NRD) if the appointee is non-state resident.

c. An exemption from the technology fee

d. Graduate Appointee health insurance paid for by the University for the appointee, and half the cost of insuring his or her dependents. Students should be sure to fill out the insurance form and submit it by the quarterly due date (see graduate appointee insurance information) and be registered for 10 credits by the 10th day of the quarter. The Graduate Appointee Insurance Program (GAIP) web site is at: http://www.washington.edu/admin/hr/benefits/insure/gaip/pubs.html

You may also want to learn more about your responsibilities of being an RA/TA. If so, you are welcome to attend a yearly three-day conference provided through the Office of Teaching and Learning, incoming first year students are required to attend. http://www.washington.edu/teaching/programs/ta-ra-conference/

**Some RA positions, such as those offered by the VA, do not always include a tuition waiver. Please speak with your PI or grant administrator for details about your non-UW RA appointment benefits.*

2. **Graduate Fellowships & Traineeships**
   If the fellowship or traineeship provides a tuition waiver, it will be requested for you by the staff member in charge of administering it. You will also USUALLY receive the same exemptions and health insurance benefits as with TA and RA appointments.

   For more information on Graduate Student Service Appointments (GSSA), see https://environment.uw.edu/intranet/research/research-policies/gssa-salaries-graduate-operating-fees/.

   If the fellowship, traineeship, or other **competitive** award does not include a tuition waiver, it may be possible for the Department to request one from the Graduate School's Fellowship Division. Check with the PhD Program Manager if you receive one of these.

3. **GO-MAP Graduate School Tuition Waivers**

   The Department may be able to apply for a tuition waiver for you through the Graduate Opportunities Minority Achievement Program (GO-MAP) Office in the UW Graduate School. GO-MAP bases its awards on academic merit, economic need, and diversity. See the program manager or visit https://grad.uw.edu/diversity/go-map/

TUITION SCHEDULE

The tuition schedule can be found on the UW web site at: http://opb.washington.edu/content/quarterly-tuition-and-fees. Global Health PhD students pay Tier III Graduate Tuition.

ACADEMIC EXPECTATIONS POLICY

This policy is meant to clearly lay out academic expectations for students in the PhD Global Health Metrics and Implementation Science Program. The below criteria should be used by students, faculty, and staff to determine parameters for academic performance and progress, and academic misconduct. This policy does not discuss degree requirements but rather evaluation of student progress and performance in and outside coursework. In a situation where a student is struggling with academic progress and performance, or misconduct, the program will make every effort to provide early, appropriate, and consistent interventions to support student success.

DEFINING ACADEMIC PROGRESS AND PERFORMANCE, AND MISCONDUCT

The DGH PhD program follows the UW Graduate School's general guidelines for defining academic progress and performance (Graduate School Memo 16: Unsatisfactory Performance and Progress) and the University's Student Conduct Code that addresses academic misconduct. Evaluation includes:

GPA REQUIREMENTS Grades will be monitored on a quarterly basis by program staff and faculty leadership. Students who's cumulative or quarterly grade point average (GPA) falls below 3.0 are considered to not be making satisfactory performance and will be asked to meet with the faculty director and the student's faculty advisor/dissertation chair. Cumulative and quarterly GPAs are computed on course taken while the student is enrolled in the UW Graduate School. Computation is based only on courses numbered 400- 599; courses graded S/NS, and CR/NC are excluded, as are the 600-800 series.

PERFORMANCE IN THE FULFILLMENT OF DERGREE PROGRAM REQUIREMENTS Students are expected to complete their coursework, exams, and dissertation research in a professional manner and to positively represent the University of Washington, School of Public Health, and Department of Global Health. Any infraction of academic misconduct qualifies as failing to meet expectations for performance and progress. Academic misconduct includes: plagiarism, multiple submissions of a single paper, cheating on an exam, illegal collaboration, and falsification of research. For more information, see the Student Conduct Code and the Student Academic Responsibility Statement. We follow the School of Public Health's Procedures for Suspected Academic Misconduct. In addition to the School's process, faculty, students, and staff are asked to inform the Global Health PhD Program Director in cases of suspected misconduct.

RESEARCH CAPABILITY, PROGRESS AND PERFORMANCE Students are responsible for establishing a workable timeline with their supervisory committee. It is the responsibility of the research or dissertation supervisory committee to evaluate research progress of students under their supervision and take proper action accordingly, e.g., failing General or Final Examination. Failure to progress or perform on agreed upon terms is classified as unsatisfactory progress and can qualify for probation, etc.

UNSATISFACTORY PERFORMANCE ON PRELIMINARY EXAMINATION A retake examination will be offered one year later for students who do not pass. Students who do not pass after two attempts will not be eligible to continue the doctoral program and may be offered the opportunity to complete a Master in Public Health degree.

UNSATISFACTORY PROGRESS OF THE PHD GENERAL EXAMINATION It is the responsibility of the Dissertation Supervisory Committee of each student to evaluate the performance of the student on the General Examination. The Committee has three options that it may utilize in grading the General Examination:

1. The committee may pass the student in which case the student confers PhD candidacy and progresses toward conferring the PhD degree.

2. The committee may decide to reexamine the student after a further period of study. The Dean of the Graduate School will approve at most two reexaminations.

3. The committee may decide not to recommend the student for further work toward the PhD degree. The effect of this recommendation is termination of the student's enrollment in the doctoral program. If this occurs, a student may choose to establish a master's thesis committee, write a thesis, give an oral presentation on the thesis. If the committee approves the thesis and all graduate school requirements are met, the MPH degree will be conferred.

Actions Taken for Unsatisfactory Performance And Progress Or For Academic Misconduct

The below recommendations may be taken if determination of unsatisfactory performance and progress or misconduct is made in consideration of a student's progress relative to other students in the program or to an individually negotiated schedule. In each situation, students will be required to meet with program leadership to review a letter from the PhD Program Director including:(1) the circumstances involved and evidence that the action requested is supported by program leadership, (2) necessary steps and a timeline articulating what a student must do to return to good standing, and (3) consequences if the plan is not acted on.

Recommendations for probation, final probation, and drop (from the program) will be reviewed by the Dean of the Graduate School. Probation and final probation recommendations are noted on a student's unofficial transcript. In addition to notification from their graduate program, students will receive final probation and drop status letters from the Dean of the Graduate School. No action will appear on the transcript for any subsequent quarter unless a new recommendation is made to the Dean of the Graduate School.

Warn: For students whose cumulative GPA has dropped slightly below 3.0. And for students who have failed to meet expectations for performance and progress. Note, this status is not reported to the Graduate School and does not appear on the student's transcript.

Probation: For students who have not corrected the deficiency which caused the warn action within the time limit specified or for students who depart suddenly and substantially from scholarly achievement. Note, a previous warn recommendation is not necessary.

Final Probation: For students who have not corrected the condition(s) that caused the probation recommendation within the time limit specified and for students who may have corrected previous probation conditions but failed additional performance requirements and did not progress toward completion of the graduate program. Final probation may only be recommended for one quarter, though the Graduate School will consider one additional quarter in extenuating circumstances. A graduate program must recommend one quarter of final probation before recommending a student be dropped from the program.

Drop: (from the program): Final action for students who have not corrected the condition(s) that caused the final probation recommendation within the time limit specified.

GRIEVANCE PROCEDURE

Occasionally major difficulties arise during a student's tenure at the University. It is recommended that students first talk with program leadership within the Department to resolve such issues. It the situation cannot be resolved within the Department; specific grievance procedures are outlined in the Graduate School Memo 33: Academic Grievance Procedure.

SECTION 2: PHD DEGREE REQUIREMENTS

PhD students must complete a minimum of 93 credits to earn the PhD degree, generally through 60+ credits of coursework and a minimum of 27 dissertation credits. The degree can be completed in four to five years, generally through two years of coursework with the remaining time for dissertation research, primary data collection, writing and defense.

DOCTORAL DEGREE REQUIREMENTS

In order to qualify for the doctoral degree, it is the responsibility of the student to meet the following Graduate School minimum requirements:

1. Completion of a program of study and research as planned by the graduate program manager in the student's major department or college and the Doctoral Committee. At least 18 credits of course work at the 500 level and above must be completed prior to scheduling the General Examination.
2. Presentation of 90 credits, 60 of which must be taken at the University of Washington. With the approval of the degree-granting unit, an appropriate master's degree from an accredited institution may substitute up to 30 credits of enrollment. This must be approved by the Co-Directors of student's area of emphasis.
3. Numerical grades must be received in at least 18 quarter credits of course work taken at the UW prior to scheduling the General Examination. The Graduate School accepts numerical grades in approved 400-level courses accepted as part of the major, and in all 500-level courses. A minimum cumulative GPA of 3.00 is required for a graduate degree at the University.
4. Creditable passage of the General Examination. Registration as a graduate student is required the quarter the exam is taken and candidacy is conferred.
5. Preparation of and acceptance by the Dean of the Graduate School of a dissertation that is a significant contribution to knowledge and clearly indicates training in research. Credit for the dissertation ordinarily should be at least one-third of the total credit. The Candidate must register for a minimum of 27 credits of dissertation over a period of at least three quarters. At least one quarter must come after the student passes the General Examination. With the exception of summer quarter, students are limited to a maximum of 10 credits per quarter of dissertation (800).
6. Creditable passage of a Final Examination, which is usually devoted to the defense of the dissertation and the field with which it is concerned. The General and Final Examinations cannot be scheduled during the same quarter. Registration as a graduate student is required the quarter the exam is taken and the degree is conferred.
7. Completion of all work for the doctoral degree within ten years. This includes quarters spent On-Leave or out of status as well as applicable work from the master's degree from the UW or a master's degree from another institution, if applied toward one year of resident study.
8. Registration maintained as a full- or part-time graduate student at the University for the quarter in which the degree is conferred (see detailed information under Final Quarter Registration).
9. A student must satisfy the requirements that are in force at the time the degree is to be awarded.

SECTION 3: PHD PROGRAM COMPETENCIES & CURRICULUM

A. CORE COMPETENCIES OF PHD STUDENTS IN GLOBAL HEALTH: METRICS AND IMPLEMENTATION SCIENCE

1. Discuss and evaluate the major issues confronting global health, including their levels and trends, their determinants, and their effect on individual and populations.
2. Describe, evaluate and apply the methods and metrics used in the Global Burden of Disease Study and alternative summary measures of population health.
3. Develop in-depth skills to design, implement, monitor and/or evaluate health programs and health systems, including their inputs, outputs, effectiveness, cost-effectiveness, and financial management.
4. Describe the biology of major global health diseases, and differentiate among the pathogenesis of diseases, infectious disease transmission modes, genetic susceptibility, nutritional concepts and the biological basis of major biomedical public health interventions.
5. Explain and assess the functions, operations, processes and performance of health systems, including critical decision-making and priority-setting mechanisms.
6. Analyze, explain and assess the role of global institutions, international non-governmental organizations and major funders and review their impact on global health.
7. Identify and differentiate the principles of financing in global health and health systems at the macro-level and the micro-level.
8. Critically appraise the current literature, evaluate the evidence, synthesize findings, draw inferences, and apply theoretical and conceptual models from a range of relevant disciplines to global health.
9. Effectively collect, collate, synthesize, analyze and assess the quality of global health data, including primary and secondary data from health information systems and a variety of other sources.
10. Acquire qualitative, quantitative, operations research and modeling skills and apply them to developing new innovative solutions for global health problems.
11. Ensure the ethical and responsible conduct of research in the design, implementation and dissemination of global health research.
12. Develop culturally-relevant professional leadership skills to work collaboratively, and to motivate and inspire others to help solve global health problems.
13. Conduct independent research that is of publishable quality and is characterized by conceptual and methodological rigor, as well as practical value, and which demonstrates expertise in global health research.
14. Critically appraise grants and participate in the grant writing and review process.
15. Effectively communicate research findings and their implications to appropriate academic, professional, policy, and lay audiences.
16. Demonstrate skills critical to teaching and mentoring.

B. PHD PROGRAM CURRICULUM

All students admitted to the doctoral program will be expected to complete a minimum of 93 credits. This includes a minimum of 27 dissertation credits, 35 credits in the core requirements, 15 credits in the area of emphasis, and the remaining credits in elective courses. A minimum of 53 credits is required of coursework which is completed through six quarters (two academic years).

Curriculum Requirements	Credits
Core Credits	**35**
Global Health Doctoral Seminar	(4)
Problems in Global Health	(4)
Quantitative Methods	(8)
Epidemiology	(8)
Implementation Science Methods	(5)
Mortality Analysis for Global Health	(3)
Impact Evaluation	(3)
Areas of Emphasis	**15**
Metrics:	
Advanced Quantitative Methods	(8)
Global Health Measurement	(4)
Leadership, Policy, Management	(3)
Implementation Science:	
Advanced Health System Research Methods	(8)
Operations Research/ Modeling	(4)
Leadership, Policy, Management	(3)
Electives Advanced Research Methods Advanced Quantitative Methods Advanced Qualitative Methods	**16**
Dissertation	**27**
Overall Total	**93**

C. CORE REQUIREMENTS OF THE PHD PROGRAM IN GLOBAL HEALTH

STUDENTS TAKE BOTH GH 511 AND GH 580 TO SATISFY THEIR DOCTORAL SEMINAR CREDITS WITHIN THEIR FIRST YEAR.

G H 511 Problem in Global Health (4) *Offered in Autumn*
Explores social, political, economic, environmental determinants of developing countries' health; traces development of societal responses to problems. Includes: origins of primary healthcare; child survival; traditional systems; population; water; sanitation; international agencies; impact of economic policies. Case study formulating pharmaceutical policy in a developing country.

G H 580 Global Health Doctoral Seminar (4) *Offered in Winter and Spring*
The purpose of this course is to provide a foundation from all disciplines in global health to all incoming doctoral students. This four-quarter course is designed to expose students to the most critical issues in global health, bringing in the complementary perspectives of pathobiology, metrics, and implementation science to build a multidisciplinary understanding of these issues, including effective and appropriate strategies for their control. This course will contribute to the preparation of students for their preliminary examination.

STUDENTS MAY CHOOSE BETWEEN CS&SS OR BIOST SERIES (511-513 OR 517-518) TO FULFILL QUANTITATIVE METHODS CORE REQUIREMENTS.

CS&SS 503 Advanced Quantitative Political Methodology (5) *Offered in Spring*
Theory and practice of likelihood inference. Topics covered include probability modeling, maximum likelihood estimation, models for binary responses, count models, sample selection, and basis time series analysis.

CS&SS 501 Advanced Political Research Design and Analysis (5) I&S *Offered in Winter*
Third methods course in political research. Testing theories with empirical evidence. Examines current topics in research methods and statistical analysis in political science. Content varies according to recent developments in the field and with interests of instructor.

BIOST 511 Medical Biometry I (4) *offered in Autumn*
Presentation of the principles and methods of data description and elementary parametric and nonparametric statistical analysis. Examples are drawn from the biomedical literature, and real data sets are analyzed by the students after a brief introduction to the use of standard statistical computer packages. Statistical techniques covered include description of samples, comparison of two sample means and proportions, simple linear regression and correlation.

BIOST 512 Medical Biometry II (4) *offered in Winter*
Multiple regression, analysis of covariance, and an introduction to one-way and two-way analyses of variance: including assumptions, transformations, outlier detection, dummy variables, and variable selection procedures. Examples drawn from the biomedical literature with computer assignments using standard statistical computer packages.

BIOST 513 Medical Biometry III (4) *offered in Spring*
Analysis of categorical data including two sample methods, sets of 2 x 2 tables, R x C tables, and logistic regression. Classification and discrimination techniques. Survival analysis including product limit estimates and the Cox proportional hazards model.

BIOST 517 Applied Biostatistics I (4) ***Offered in Autumn***
Introduction to the analysis of biomedical data. Descriptive and inferential statistical analysis for discrete, continuous, and right-censored random variables. Analytic methods based on elementary parametric and non-parametric models for one sample; two sample (independent and paired), stratified sample, and simple regression problems.

BIOST 518 Applied Biostatistics II (4) ***Offered in Winter***
Multiple regression for continuous, discrete, and right-censored response variables, including dummy variables, transformations, and interactions. Introduction to regression with correlated outcome data. Model and case diagnostics. Computer assignments using real data and standard statistical computer packages**.**

EPI 512 Epidemiologic Methods I (4) ***Offered in Autumn***
Principles and methods of epidemiology. Covers measures of disease frequency, measures of effect, causal inferences, descriptive epidemiology, study types, misclassification, and effect modification. Designed for students who want to take 513.

EPI 513 Epidemiologic Methods II (4) ***Offered in Winter***
Continuation of 512. Considers how designs of epidemiologic studies may be constructed to maximize etiologic inferences. Covers confounding, randomized trials, cohort studies, case-control studies, and selected topics. Prerequisite: EPI 512.

G H 541 Fundamentals of Implementation Science in Global Health (5) ***Offered in Spring***
Provides an introduction to the emerging field of implementation research by outlining various methods that are applied to improving implementation (including applied engineering, management tools, health systems, and policy research), and using experiential case studies from global health leaders. Addresses barriers to effective replication and scale-up in local settings.

G H 590 A Mortality Analysis for Global Health(4) ***Offered in Winter every other year***
This course provides a thorough overview of conceptual, methodological and empirical basis for quantifying health among individuals and populations. Students of this course will learn the strength and limitation in applying the mortality analysis methods introduced in this course especially in developing countries with limited empirical data.

G H 590 Quantitative Impact Evaluations (3) ***Offered in Spring***
This course focuses on the application of quantitative techniques for impact evaluation. Special emphasis will be placed on learning when, why, and how methods are applied. The topics covered include classic methods such as instrumental variable, double-difference, regression discontinuity, and matching. In addition, alternative methods, such quantile regression, will be introduced.

D. METRICS AREA OF EMPHASIS

STUDENTS MAY CHOOSE FROM THE FOLLOWING TO MEET THEIR ADVANCE QUANTITATIVE METHODS REQUIREMENTS.

BIOST 536 Categorical Data Analysis in Epidemiology (4) *Offered in Autumn*
Summary of univariate categorical data analysis; introduction to multivariate analysis of categorical epidemiologic data using multiplicative models. Experience at interpretation; familiarity with available programs gained by analysis of bona fide data, critiques of analyses appearing in literature.

BIOST 540 Correlated Data Regression (3) *Offered in Spring*
Introduction to regression modeling of longitudinal and clustered data from epidemiology and health sciences. Interpretation and familiarity with available programs gained by analysis of bona fide data; critiques of analyses appearing in literature.

CSE 546 Machine Learning (4) *Offered in Winter*
Explores methods for designing systems that learn from data and improve with experience. Supervised learning and predictive modeling; decision trees, rule induction, nearest neighbors, Bayesian methods, neural networks, support vector machines, and model ensembles. Unsupervised learning and clustering

CS&SS 510 Maximum Likelihood Methods for the Social Sciences (5) *Offered in Autumn*
Introduces maximum likelihood, a more general method for modeling social phenomena than linear regression. Topics include discrete, time series, and spatial data, model interpretation, and fitting.

CS&SS 536 Analysis of Categorical and Count Data (3) *Offered in Autumn*
Analysis of categorical data in the social sciences. Binary, ordered, and multinomial outcomes, event counts, and contingency tables. Focuses on maximum likelihood estimations and interpretations of results.

CS&SS 560 Hierarchical Modeling for the Social Sciences (4) *Offered in Spring*
Explores ways in which data are hierarchically organized, such as voters nested within electoral districts that are in turn nested within states. Provides a basic theoretical understanding and practical knowledge of models for clustered data and a set of tools to help make accurate inferences.

CS&SS 564 Bayesian Statistics for the Social Sciences (4) *Offered in Spring*
Statistical methods based on the idea of probability as a measure of uncertainty. Topics covered include subjective notion of probability, Bayes' Theorem, prior and posterior distributions, and data analysis techniques for statistical models.

CS&SS 566 Causal Modeling (4) *Offered in Spring*
Construction of causal hypotheses. Theories of causation, counterfactuals, intervention vs. passive observation. Contexts for causal inference: randomized experiments; sequential randomization; partial compliance; natural experiments, passive observation. Path diagrams, conditional independence, and d-separation. Model equivalence and causal under-determination.

STUDENTS MAY CHOOSE FROM THE FOLLOWING TO MEET THEIR GLOBAL HEALTH MEASUREMENT REQUIREMENTS. SUPPLEMENTARY COURSES MUST BE APPROVED BY PHD PROGRAM MANAGER.

G H 590 G Global Burden of Disease (3) *Offered in Summer*
Burden of Disease is a cutting-edge measurement technique that allows health researchers to quantify and understand disease epidemiology at national and global levels. Burden of Disease estimates provide an overview of the levels of population health and the causes of loss of health, which can be used as evidence to inform health policy and advocacy.

G H 539 Methods, Tools, and Data in Global Health (2) *Offered in Summer*
Familiarizes students with current global health issues and their analytical challenges. Introduces analytical methodologies, quantitative concepts, statistical packages applied to global health challenges, and software used in health metrics and evaluations research.

G H 590 H Introduction to Public Health Surveillance
Detecting outbreaks, preventing epidemics, raising awareness, allocating resources, or monitoring risk behaviors, all are public health activities requiring surveillance data. This course is designed to introduce students to public health surveillance and equip them with the knowledge to plan, implement, and evaluate public health surveillance systems.

G H 590 F Supply and Demand of Health and Health Services in Developing Countries
This course examines the demand, supply and financing of health and health service in developing countries. Students will be introduced to evidence about a thematic topic and use theoretical frameworks from the field of economics to interpret that evidence. Special attention is devoted to drawing causal inference from observational data.

G H 533 Survey Research Methods
This course is based on an experiential adult learning model. It focuses on the principles and methods of survey research and will not cover specific survey content. Examples used in class are chosen to illustrate an underlying concept, rather than the survey content. During the quarter students will develop a survey research proposal and a questionnaire.

STUDENTS MAY CHOOSE FROM THE FOLLOWING TO MEET THEIR LEADERSHIP, POLICY, MANAGEMENT REQUIREMENTS.

G H 521 Leadership Development in Global Health (3) *Offered in Autumn*
Focuses on management and leadership skills for complex global health settings. Includes personal leadership strengths/values; management dilemmas, data-driven decisions; program planning design and evaluation; and resource management.

G H 522 Global Program Management and Leadership (3) *Offered in Winter*
Designed to expand the student' s capacity to support individuals, groups, and organizations. Provides students an understanding of their current level of leadership performance and effectiveness, their strengths, and their development needs. Relies heavily on assessment, feedback, and interactive activities.

G H 523 Policy Development and Advocacy for Global Health (3) *Offered in Spring*
Provides a foundation for developing a generic leadership perspective and orientation to the issues associated with the organization, financing, and delivery of healthcare services. Introduces skills in organizing, managing, and leading complex systems and processes within a variety of local, regional, national, or global contexts.

E. IMPLEMENTATION SCIENCE AREA OF EMPHASIS

STUDENTS MAY CHOOSE FROM THE FOLLOWING TO MEET THEIR ADVANCED HEALTH SYSTEM RESEARCH METHODS REQUIREMENTS.

HSERV 521 Qualitative Methods in Health Services Research (3) ***Offered in Spring***
Provides theoretical training in qualitative research and in depth training in qualitative data management, analysis, interpretation, and presentation. Focuses on how to frame qualitative research questions, design appropriate research strategies, and integrate qualitative and quantitative methods in research designs in public health.

HSERV 523 Advanced Health Services Research Methods I (4) ***Offered in Autumn***
Examines how to apply research methods and addresses recurring issues in health services research. Covers statistical theory that motivates the methods and empirical work that demonstrates a method's use.

HSERV 524 Advanced Health Services Research Methods II (4) ***Offered in Winter***
Emphasizes the application of advanced biostatistical/econometric techniques in applied research. Examines a wide variety of posed research questions and demonstrates how to best obtain answers.

HSERV 525 Advanced Health Services Research Methods III (4) ***Offered in Spring***
Introduction to methods of handling data and conducting basic analyses in the broad and heterogeneous field of health services research. Examine concepts and conduct hands-on research using data sets selected by students.

STUDENTS MAY CHOOSE FROM THE FOLLOWING TO MEET THEIR OPERATIONS RESEARCH AND MODELLING REQUIREMENTS.

G H 531 Research Methods in Developing Countries (3/4) ***Offered in Winter***
Simple, practical methodologies to obtain and validate information regarding health status and health services in developing countries. Usefulness, validity, limitation of vital records, health reports, household (and cluster) surveys, nutritional anthropometry, and qualitative methods discussed.

G H 539 Methods, Tools, and Data in Global Health (2) ***Offered in Summer***
Familiarizes students with current global health issues and their analytical challenges. Introduces analytical methodologies, quantitative concepts, statistical packages applied to global health challenges, and software used in health metrics and evaluations research.

EPI 554 Introduction to Epidemic Modeling for Infectious Diseases (3) ***Offered in Autumn***
Covers the basic tools for building and analyzing mathematical models of infectious disease epidemics. Model types include deterministic and stochastic models, compartmental and individual-based models. Laboratory provides hands-on model building experience in Excel, Stella, and R.

CSSS 564 Bayesian Statistics for the Social Science (4) ***Offered in Spring***
Design and implementation of selection and estimation procedures. Emphasis on human populations. Simple, stratified, and cluster sampling; multistage and two-phase procedures; optimal allocation of resources; estimation theory; replicated designs; variance estimation; national samples and census materials

CSE 546: Machine Learning (4) ***Offered in Autumn***
Explores methods for designing systems that learn from data and improve with experience. Supervised learning and predictive modeling; decision trees, rule induction, nearest neighbors, Bayesian methods, neural networks, support vector machines, and model ensembles. Unsupervised learning and clustering.

STUDENTS MAY CHOOSE FROM THE FOLLOWING TO MEET THEIR LEADERSHIP, POLICY, MANAGEMENT REQUIREMENTS.

G H 521 Leadership Development in Global Health (3) *Offered in Autumn*
Focuses on management and leadership skills for complex global health settings. Includes personal leadership strengths/values; management dilemmas, data-driven decisions; program planning design and evaluation; and resource management.

G H 522 Global Program Management and Leadership (3) *Offered in Winter*
Designed to expand the student's capacity to support individuals, groups, and organizations. Provides students an understanding of their current level of leadership performance and effectiveness, their strengths, and their development needs. Relies heavily on assessment, feedback, and interactive activities.

GH 523 Policy Development and Advocacy for Global Health (3) *Offered in Spring*
Provides a foundation for developing a generic leadership perspective and orientation to the issues associated with the organization, financing, and delivery of healthcare services. Introduces skills in organizing, managing, and leading complex systems and processes within a variety of local, regional, national, or global contexts.

F. ELECTIVES

ELECTIVE CREDITS ARE FLEXIBLE AND SHOULD RELATE TO THE STUDENT'S INTEREST WITHIN METHODS, INFECTIOUS DISEASE, LEADERSHIP, AND GLOBAL HEALTH. ALL THE COURSES LISTED ABOVE WILL ALSO COUNT TOWARD ELECTIVES. STUDENTS MAY ALSO CONTACT THE PROGRAM MANAGER/ACADEMIC ADVISOR TO APPROVE OTHER ELECTIVES.

CSSS 564 Bayesian Statistics for the Social Science (4) *Offered in Spring*
Design and implementation of selection and estimation procedures. Emphasis on human populations. Simple, stratified, and cluster sampling; multistage and two-phase procedures; optimal allocation of resources; estimation theory; replicated designs; variance estimation; national samples and census materials.

CSSS 544 Event History Analysis (5) *Offered in Winter*
Event history analysis has become an important analytical tool in many fields of the social sciences. This course examines the standard tools used for event history analysis—things like life tables, Kaplan Meier estimates, Cox proportional hazards model, and parametric survival models. Additionally, the course focuses on building a tool kit for developing custom models that involve "non-standard" methods like subgroup heterogeneity, incorporation of "immune" individuals, mixture models, models for clustered observations, multi-state models and social diffusion models. This course is not specific to any field within the social sciences, although many of the examples in this course are taken from demography

CSSS 567 Statistical Analysis of Social Networks (4) *Offered in Autumn*
Statistical and mathematical descriptions of social networks. Topics include graphical and matrix representations of social networks, sampling methods, statistical analysis of network data, and applications.

PABIO 553 Survival Skills of Scientific Research (2) *Offered in Spring*
Focuses on skills needed for scientific career: writing abstracts, curriculum vitae, research proposals; preparing for oral presentations; lab management skills; discussion of mentorship/trainee relationships; case-based discussions of various topics in ethics and scientific misconduct.

G. COURSEWORK PATH

The first and second year is when students complete core curriculum and area of emphasis courses. The course maps below are examples of the coursework that PhD students may take. Students should meet with their faculty mentor to further discuss the courses that best suit their research interest and schedule.

EXAMPLE CURRICULUM FOR THE METRICS COURSE OF STUDY

	Fall		Winter		Spring	
Yr 1	EPI 512	(4)	EPI 513	(4)	G H 541	(5)
	G H 511 A	(4)	G H 590 (Mort.)	(3)	G H 536	(3)
	G H 539	(2)	G H 580	(2)	G H 580	(2)
	BIOST 517 A	(4)	CSE 546	(4)	G H 590 (Imp.Ev)	(3)
Yr 2	BIOST 536	(4)	CSSS 566	(4)	CSSS 560	(4)
	G H 521	(3)	HSERV 524	(4)	CSSS 503	(5)
	CSSS 510	(5)	BIOST 537	(4)	G H 800	(2)
	Elective		G H 522	(3)	Elective	
Yr 3	Dissertation					
Yr 4	Dissertation					

EXAMPLE CURRICULUM FOR THE IMPLEMENTATION SCIENCE COURSE OF STUDY

	Fall		Winter		Spring	
Yr 1	EPI 512	(4)	EPI 513	(4)	G H 541	(5)
	G H 511 A	(4)	G H 590 (Mort.)	(3)	G H 536	(3)
	G H 539	(2)	G H 580	(2)	G H 580	(2)
	BIOST 517	(4)	BIOST 518	(4)	Elective	
Yr 2	BIOST 536	(4)	CSSS 566	(4)	G H 800	(2)
	G H 521	(3)	HSERV 524	(4)	G H 538	(5)
	EPI 520 A	(3)	BIOST 537	(4)	CSSS 526	(3)
	HSERV 523	(4)	Elective	(3)	HSERV 525	(4)
Yr 3	On Leave (Data Collection) or Dissertation					
Yr 4/5	Dissertation					

SECTION 4: PROGRAM TIMELINE AND REQUIREMENTS

A. PROGRAM TIMELINE

Outlined below is a timeline of the general path a doctoral student would take toward their terminal degree. It is expected that most students will complete their PhD degree within four years following admissions to the program for students who are not involved in primary data collection and five years for students who are involved in primary data collection. Students may be able to complete the degree sooner, if they enter the program with master level graduate students in a relevant area.

Please note that there may be variation of this path for some students.

Yr 1	1. Assigned an Advisor 2. Core coursework and area of emphasis coursework 3. Some flexibility can be granted on steps 3 and 4 in year two if the student starts the program with a Master's degree. A discussion should be held with the Academic Advisor and Program Manager.

Yr 2	1. Core coursework and area of emphasis coursework 2. Take preliminary written examination (Qualifying Exam) 3. Establish a doctoral committee and consider changing primary Advisor based on developing research interests. Students are encouraged to create a team of mentors, and to change primary mentors as interest and developmental needs change. 4. Begin writing Preliminary Dissertation Proposal (PDP) (If needed)

Yr 3	1. Complete coursework (if needed) 2. Conduct primary data collection (if needed) -OR- 3. Finalize Preliminary Dissertation Proposal (PDP) and submit to the doctoral committee. 4. Take general examination- written 5. Revise dissertation and submit Final Dissertation Proposal (FDP) 6. Take general examination- oral 7. Work on dissertation

Yr 4/5	1. Finalize Preliminary Dissertation Proposal (PDP) and submit to the doctoral committee. 2. Take general examination- written 3. Revise dissertation and submit Final Dissertation Proposal (FDP) 4. Take general examination- oral 5. Work on dissertation -OR- 1. Work on dissertation and search for jobs 2. Dissertation defense and final exam 3. Publish results

B. OTHER PROGRAM REQUIREMENTS (REPORTING & DOCUMENTATION)

Yr 1	1. **In June:** Provide the program manager with your **Graduate Student Professional Development Form** and a copy of your **current CV**. If you maintain an NIH **biosketch**, please provide a copy of that as well. ⇨ *Ongoing: provide the program manager with news about your travel to conferences, presentations, publications, funding, and other accomplishments.*

Yr 2	1. **In June:** Provide the program manager with your **Graduate Student Professional Development Form** and a copy of your **current CV**. If you maintain an NIH **biosketch**, please provide a copy of that as well. 2. Inform the program manager when you have formed your **doctoral committee** so that the committee can be formally established with the UW Graduate School. 3. Provide the program manager with copies of your **Preliminary Written Exam (Qualifying Exam) questions and final responses**, along with any feedback you receive from your committee. 4. Provide the program manager with a copy of your **Preliminary Dissertation Proposal** (PDP, a.k.a. short proposal). ⇨ *Ongoing: provide the program manager with news about your travel to conferences, presentations, publications, funding, and other accomplishments.*

Yr 3	1. **In June:** Provide the program manager with your **Graduate Student Professional Development Form** and a copy of your **current CV**. If you maintain an NIH **biosketch**, please provide a copy of that as well. 2. Provide the program manager with a copy of your **Final Dissertation Proposal** (as submitted to your doctoral committee). 3. Submit the **Request for General Examination form** to the Graduate School at least three weeks before your intended Oral Exam, signed by all committee members, including your GSR, and including the date, time, and location of your exam. 4. Be sure to provide the program manager with copies of all materials associated with your **General Oral Exam**. 5. After you have completed your General Oral Exam, inform the program manager of which members of your doctoral committee will now become your **reading committee**. (These are usually your chair and at least two members of your committee.) ⇨ *Ongoing: provide the program manager with news about your travel to conferences, presentations, publications, funding, and other accomplishments.*

Yr. 4/5	1. **In June:** Provide the program manager with your **Graduate Student Professional Development Form** and a copy of your **current CV**. If you maintain an NIH **biosketch**, please provide a copy of that as well. 2. Submit the **Request for Final Examination form** (your dissertation defense) to the Graduate School at least three weeks before your intended defense, signed by all committee members, including your GSR, and including the date, time, and location of your defense. 3. Provide the program manager with copies of all materials associated with your **Dissertation Defense**. *4.* **Submit your Dissertation to the UW Graduate School within 60 days** of your defense. It is a good idea to arrange with the Graduate School for a preliminary review a few weeks in advance of your final submission. *If your defense and your submission of your dissertation occur across the boundaries of an academic quarter, you must be registered both for the quarter in which you defend and for the quarter in which you submit (for at least 2 credits each quarter).* 5. Provide the program manager with a final copy of your **Dissertation**. 6. Complete the program survey and alumni information before graduation. ⇨ *Ongoing: provide the program manager with news about your travel to conferences, presentations, publications, funding, and other accomplishments.*

C. MENTORSHIP AND COMMITTEES

ADVISING & MENTORSHIP

Each student will be assigned to an advisor from the time that he/she is accepted into the program. The initial advisor will be selected by the Steering Committee of the PhD program, which will aim to pair each student with a faculty member with related interests. In addition, the PhD Program Manager also serves as a general advisor to students. During the first quarter of the program it is expected that mentors will meet twice a month with their students with a focus on building a relationship and supporting the student's success in the program by guiding them in their course selection and use of available resources. It is expected that the meetings will happen at least twice per quarter after the first quarter, or with a greater frequency determined by the needs of each student.

The advisor has the responsibility of assisting the student in building an academic course plan that meets the student's goals within the program requirements. Additionally, the advisor serves as a conduit to direct students to academic resources, research opportunities, and the academic community.

Advising is part of every faculty member's responsibilities within the Department of Global Health. Therefore, students should not feel as though they are imposing when asking advice from faculty. Advising faculty should be available to meet with assigned students, although students should be respectful of faculty time by scheduling meeting times that are convenient for both students and faculty. **It is the student's responsibility to arrange meeting times with their faculty advisor.**

ADVISOR RESPONSIBILITIES

A. Meet regularly to fill out the appropriate forms needed to track student's success through the program.
B. Serve as an educational/professional mentor for the student.
C. Assist with identifying education/research goals and needs at the start of the program.
D. Monitor the overall success of the student in an academic and professional setting.
E. Work with the students to build relationships and networks within Seattle's academic community and global health organizations.
F. Maintain contact with track director and program manager about student progress, excellence, areas of concern.
G. Identifying and encourage students for funding opportunities, travel, and promoting their research.
H. Have sensitivity and understanding to diverse needs and concerns experienced and shared by the student. Direct student to Program Manager for additional resources as necessary.

STUDENT (ADVISEE) RESPONSIBILITIES

A. Maintaining close communication with program manager, provide feedback about the program, coursework, and other academic opportunities.
B. Schedule and meet with your advisor at least twice each quarter.
C. Identify and develop professional career goals and research interests.
D. Understand administrative responsibilities and submission process for forms each quarter to the PhD Program Manager
E. Provide feedback on advising during the annual program retreat each spring.

In general advisors and advisees should meet twice a month during the first quarter of the program and at least twice a quarter thereafter to review course plans and complete the following below:
Graduate Student Professional Development Form (quarterly maintenance, every year in June)
Program evaluation about Managers/advisors/ every year in June program retreat (input)

STUDENT GUIDE FOR ADVISING SESSIONS

As you begin the PhD program in Global Health, you should use this information to develop and understanding of what you expect to gain from your advising/mentoring relationships. By clarifying your own expectations, you will be able to communicate them more effectively to your mentors.

SECTION I

Please check off items you deem important and share them with your advisor.

In my advisor/student relationship, I want to:

__ Discuss my coursework and academic success

__ Discuss my advisors research and academic interests

__ Identify connections within the university system or externally that align with my research interests

__ Find additional funding opportunities to help pursue my studies or promote my current research interests

__ Build academic and professional goals

__ Career options and job preparation

__ Receive encouragement and support

SECTION II

Use this checklist to plan initial meetings with your advisors in light of what you hope to achieve over the long term.

__ Arrange a meeting schedule for your first quarter and thereafter

__ Explain your goals for what you'd like to achieve in these meetings

__ Discuss and record the following activities you've selected in section I

__ Discuss and record answers for the **Progress and Planning Form**

SECTION III

The guidelines below are the absolute minimum interactions students and advisors should expect. We encourage that our students/advisors meet more frequently, especially in the early stages of their studies. This will foster stronger relations and the potential for life-long colleagues as a result of this mentoring experience.

Year One: First Quarter	**Date**
Review students response from Mentee Expectation and checklist Form(s)	
Identify professional and educational objectives	
Review program competencies and develop a plan to meet educational goals	
Identify faculty and research communities that have student's interest	
If applicable, ensure that student is acclimating to the US education system, standards, and expectations	
Select courses for next quarter	

Year One: Second Quarter	**Date**
Two Meetings	Meeting #1_____ Meeting #2_____
Review grades from the first quarter	
Review program competencies and develop a plan to meet educational goals	
Discuss possible research topics for thesis and non-related thesis related research experiences	
Review professional and educational objectives	
Select courses for next quarter	

Year One: Third Quarter	**Date**
Two Meetings	Meeting #1_____ Meeting #2_____
Review grades from the second quarter	
Review program competencies and develop a plan to meet educational goals	
Discuss research topics of interests	
Review professional and educational objectives	
Select courses for next quarter	
Review the Student Progress Planning form with Advisor	

Year Two: All Quarters	**Date**
Two Meetings	Meeting #1_____ Meeting #2_____
Review grades	
Review program competencies and develop a plan to meet educational goals	
Continue discussions on research topics of interests	
Review professional and educational objectives	
Identify which faculty you may want on your dissertation committee	
Discuss how to prepare to take the preliminary examination	
Review the Student Progress Planning form with Advisor	

Years Three- Four/Five: All Quarters	**Date**
Two Meetings	Meeting #1_____ Meeting #2_____
Finalize Preliminary Dissertation Proposal	
Review program competencies and develop a plan to meet educational goals	
Continue discussions on research topics of interests	
Review professional and educational objectives	
Discuss how to prepare to take the General Exam	
Discuss final steps toward dissertation	
Review the Student Progress Planning form with Advisor	

ESTABLISHING A DOCTORAL COMMITTEE

It is expected that during the second year in the program each student will begin to identify faculty members with similar research interests who can serve as their dissertation mentor and chair of their dissertation committee. Students should meet with the Program Director to discuss potential faculty to serve as their chair before formally asking someone. Once a chair of a committee has been identified, this faculty member will assume the mentorship role for the student. The student should discuss with their chair the other faculty who will be the committee members, the Chair will approve the committee. At the end of the second year in the program, students email the program manager the names of their committee members so that it can be officially established through the Graduate School. This Committee consists of at least four members, of whom two must have primary, joint or adjunct appointments in the Department of Global Health. For more information on this process, please see the information on the Graduate School's website: https://grad.uw.edu/policies-procedures/graduate-school-memoranda/memo-13-supervisory-committee-for-graduate-students/

All committees must include a Graduate School Representative (GSR) who is a productive scholar in his or her own research area that may differ from that of the student's dissertation project. You may find GSRs here: https://grad.uw.edu/policies-procedures/doctoral-degree-policies/graduate-school-representative-gsr-eligibility/. The remaining member must be a productive scholar in the student's major field and/or subfields. If a student wishes to have as a committee member an individual who is not a faculty member at the University of Washington, the Steering Committee of the PhD Program will determine whether this individual can serve on a doctoral committee based on their academic credentials and potential to be a contributing member to a doctoral committee.

The doctoral committee will oversee the student's progress and evaluate performance and conduct all examinations. It is expected that the chair of the committee will play the strongest mentorship role, but all members will meet with the student regularly and contribute to the strong mentorship environment that the PhD program will foster.

ESTABLISHING A READING COMMITTEE

Once a draft of the first paper has been prepared, the Reading Committee is officially designated (generally all members of the doctoral committee, minus the GSR) and it reviews all drafts and recommends revisions. Students must notify the program manager when this step has been achieved so that the names of the Reading Committee members can be conveyed electronically to the Graduate School. An example can be requested from the Program Manager for reference.

SECTION 5: EXAMINATION

PRELIMINARY WRITTEN EXAMINATION (QUALIFYING EXAM)

The preliminary written examination is given at the end of the second academic year and is intended to test the student's ability to apply the principles and methods presented in the core requirements. The exam is given when the student has completed the core courses, but no later than the end of the second year.

Each student will have 96 hours to complete the exam and can start it at any time within the 10-day period (Friday to Sunday).

There will four different types of questions:

1. a data analysis question
2. a research design question
3. a critical appraisal of current knowledge of a topic
4. a synthesis of existing knowledge into policy implications and recommendations

There is a minimum level of achievement that must be met on all questions in order to pass the exam. Students who pass will be eligible to move on to the next phase, which includes establishing a doctoral committee and taking general examinations to advance to doctoral candidacy. For students who do not pass on the initial attempt a retake examination will be offered one year later. Students must retake and pass all questions on the exam. Students who do not pass after two attempts will not be eligible to continue the doctoral program and may be offered the opportunity to complete a Master in Public Health degree, as several of the courses in the PhD program would fulfill MPH degree requirements.

GENERAL EXAMINATION (WRITTEN AND ORAL EXAMS)

The general examination will be administered by the students' doctoral committee and consists of two parts, a written and an oral part. The examination covers the student's chosen area of emphasis and the general topic of the dissertation. The exam is designed to measure the students' ability to analyze and synthesize information, determine whether the student has significant breadth and depth of knowledge in the area of emphasis and the dissertation topic and evaluate whether the student has adequate knowledge of recent advances in methodological issues relevant to the area of interest.

WRITTEN EXAMINATION

The written exam concentrates on the student's proposed research area and the methods applicable to study their topic of interest (Preliminary Dissertation Proposal). It is recommended that the doctoral committee and student meet prior to the written exam to review student progress, assess the student's readiness for dissertation work, the feasibility of the project, and resources available for a high quality product. The committee members may require additional coursework to remedy perceived deficiencies in any relevant area. If the committee desires, they may discuss general topic areas for the written exam with the student and provide a few seminal readings in an area. However, it is the student's responsibility to know the relevant literature and methods applicable to the area of emphasis and dissertation.

The format of the written exam should be agreed upon by the committee and student. It is generally a 7-to-14-day take-home exam consisting of 4 to 7 questions. Each faculty member asks one or more exam questions and may suggest an approximate number of pages for the answer to a question. Committee members are encouraged to read the entire exam, and the chair must do so. Each faculty member grades his/her own question(s) as Pass, Rewrite, or Fail. The full committee decides if the student has passed the exam overall. A student who does not pass the written portion of the exam may be re-examined, at the discretion of the committee. The committee members can require additional course work to remedy perceived deficiencies in any relevant area.

ORAL EXAMINATION

The oral exam portion is given once the written examination comments are incorporated into the **Final Dissertation Proposal.** The oral exam is usually scheduled one to six months after successful completion of the written examination, and after completing the Final Dissertation Proposal. The committee must have sufficient time to review and discuss the dissertation proposal before the oral examination is held. The oral exam is the UW official exam required for a student to pass to doctoral candidacy and, therefore, the Graduate School Representative must be present at the oral general exam. The public is welcome to attend.

In order for the general exam to proceed, at least three members of a doctoral committee (including the Chair, Graduate School Representative, and one additional Graduate Faculty member) must be present at the examination. If a member(s) or student needs to participate at an exam but cannot be physically present, please refer to the Instructions for Video Conference in Doctoral Examinations on the Graduate School website: https://grad.uw.edu/policies-procedures/doctoral-degree-policies/instructions-for-video-conferencing-in-doctoral-examinations/.

If the doctoral committee does not approve the student to move to doctoral candidacy students can do further work and repeat of the oral examination within six months of the first attempt. If a student fails a second time, the student's enrollment in the PhD program is terminated, per Graduate School policies and he/she may be offered an opportunity to complete a Master in Public Health degree program by taking additional courses to fulfill the requirements for the MPH degree.

The doctoral committee assesses the student's characteristics, experiences, and resources to conduct a high quality dissertation and to eventually become a successful global health researcher. The committee considers the following types of questions:

1. Does the student have sufficient experience in research methods and management through courses or work?
2. Does the student have sufficient resources (data available, data that can be collected and managed) to complete the study?
3. Does the student have sufficient financial support and support from the doctoral committee and research team to successfully complete the project?
4. Has the student identified a reasonable list of tasks and timeline, and is it likely that the student can adhere to the timeline?
5. Does the student have the personal skills, intellectual curiosity, work style, and the desire to develop professionally into a health services researcher?

Students must apply formally for a general exam date at least three weeks prior to the examination. See the Graduate School website for more information: https://grad.uw.edu/policies-procedures/doctoral-degree-policies/general-examination-admission-to-candidacy-for-doctoral-degree/

The student will reserve a room for the exam. Once the date, the room and doctoral committee member's attendance is confirmed, the student will enter the request for a General Examination on the Graduate School web site: https://grad.uw.edu/for-students-and-post-docs/mygrad-program/

DISSERTATION DEFENSE

Writing and defending the doctoral dissertation is the final requirement for a PhD. Doctoral students are required to write a dissertation that addresses an issue of importance in the field of global health and significantly contributes to the advancement of the field of metrics and implementation science. The dissertation may take the format of a three-paper or a book-length dissertation. The topic of the dissertation will be chosen by the student, in consultation with the doctoral committee. The dissertation must demonstrate an understanding of the theory and methods related to the student's area of emphasis and must conform to departmental, school and university guidelines. The doctoral committee will review the dissertation and recommend revisions, as necessary. When the doctoral committee determines at a formal committee meeting that the student is ready for the final examination, the reading committee should be appointed. Students should email the program manager their reading committee so it can be established through the Graduate School. At least three weeks before an examination, the student should request for a "final examination" on the graduate school website: https://grad.uw.edu/for-students-and-post-docs/mygrad-program/

The final examination for the PhD degree consists of a public defense of the student's dissertation orally before the doctoral committee. All doctoral committee members including the Chair, Graduate School Representative and additional Graduate Faculty members must be present at the examination. Students must successfully defend their research for the degree to be granted. The dissertation presentation must be advertised and is open to the public. Following the presentation, the PhD candidate will meet with the doctoral committee. Each member will have the opportunity to question the student on any aspect of the presentation. Students may repeat their defense if performance is unsatisfactory.

SECTION 6: ADMINISTRATIVE NEEDS

OFFICE SPACE

Many doctoral students have access to desk space through their research assistantships or teaching assistantships, or at the location of their mentors. At Harris Hydraulics there are three desk spaces available for PhD and post-doc students. These are prioritized for those students who meet the following three criteria:

1. do not have desk space anywhere else
2. have an advisor based in Harris
3. have completed their qualifying exam and need quiet space for writing a dissertation.

Assigned desks will be labeled, and personal files may be stored there by the assignees. However, if the assignee is not present, the agreement is that their desk and computer may be used. In addition, one of these desks will be held open and available daily on a first come, first serve basis. This desk is meant to be used between classes or when students need quiet space. Students may not store personal items or files in this space and must keep it clean. Please report any issues with the space to the program manager. Additionally, students are welcome to use the student lounge at Harris Hydraulics (which has 10 computer stations) when they need access to work space on campus.

BUSINESS CARDS

The program has a limited budget to supply students with business cards. These should be requested only for field work and conferences. If you have a request for business cards, please email the program manager with an explanation of the event and need. The expectation that it will take three weeks from request to printing.

SECTION 7: PROGRAM GOVERNANCE

The Global Health Graduate Program has five committees that deal with various student-related activities and issues. As the program grows, it is expected that the program will have a Graduate Student Advisory Committee, Student Affairs Committee, and Curriculum Committee. These three committees will have student members. The process to choose students for these positions will vary with the committee.

As the program expands, the following committees with have expectations listed below.

Doctoral Student Advising Committee: It will help monitor the academic progress of graduate students.

Doctoral Student Affairs: This committee will help maintain effective communication between the faculty and students of the program. It organizes the new student orientation, program retreat, and research symposium, oversight for the Student Handbook and a forum for discussion of non-academic student concerns.

Curriculum Committee: Oversees the teaching program in Global Health including the detection of curriculum gaps, course duplication and overall quality control. Responsibilities include programmatic development, proposal of teaching assignments to the chair, and supervision of peer and student evaluation.

Admissions Committee: It will provide oversight of admission and entry of applicants into the graduate program. Responsibilities include review of program admission requirements, program advertisement, application procedures, recommending funding strategies, the review process, establishing entry into the program.

APPENDIX A. NEW STUDENT CHECKLIST

☐ **Set up a UW NetID and email.** Admitted students receive their student number and PAC (personal access code) after accepting the offer of admission. With a student number and PAC, a UW NetID can be set up. A student's UW NetID will precede uw.edu and become the student's UW email address. The UW offers four email systems to choose from. You can obtain information about them here: http://www.washington.edu/itconnect/connect/email/.

☐ **Communicate with your student host.** Incoming students are paired with a continuing student during the admissions process. Student hosts can assist with the transition of moving to Seattle, entering graduate school, and the identification of social and cultural resources.

☐ **Register for courses.** In order to register for courses, students must first have established a UW NetID. International students must also complete an online check-in. Students should reference the UW Academic Calendar for dates of instruction, registration deadlines, school holidays, and more.

☐ **Find housing.** The majority of our students live off-campus in shared housing. Campus housing information can be found through UW Housing and Food Services. They offer housing options for single students and students with families. For off-campus housing, Craigslist is more often used. The UW School of Law has a list of neighborhood descriptions to assist with identifying housing: http://www.law.washington.edu/Admissions/Admits/Housing/.

☐ **Research transportation options.** Most students utilize the U-PASS to travel by Metro bus around town. Students are automatically charged for the pass each quarter they are registered. Extensive bike and walking trails are found around Seattle as well. The closest airport to Seattle is SeaTac International Airport. For new residents, referring to a map of the Seattle area is strongly recommended; with so many bodies of water and hills it can be a confusing city to navigate.

☐ **Get your Husky Card.** The Husky Card is the official identification card for members of the University of Washington community. The U-PASS is electronically embedded into the Husky Card (scan it when boarding the bus or light rail). A Husky Card should be obtained as soon as a student arrives on campus. The Husky Card Account & ID Center is located on the ground floor of the Odegaard Undergraduate Library.

☐ **Apply for Washington state identification.** New Washington state residents are legally required to get a Washington state driver's license or ID card within 30 days of moving to the state. Check out the Washington State Department of Licensing website (http://www.dol.wa.gov/officelocations.html) to find office locations and information on what type of identification is needed when applying for an ID or driver's license. If eligible, you can also register to vote when getting an ID.

☐ **Explore UW resources.** The UW Student Guide (http://www.washington.edu/students) is a comprehensive reference for UW students and includes information on Academics, Finances, Student Life, University Policies, and much more. The University Bookstore (http://www.bookstore.washington.edu/home/home.taf) is where you can purchase Husky products and books for class.

☐ **Prepare for the first day of class.** Helpful maps include a campus map (http://www.washington.edu/maps) and a Health Sciences Building (HSB) map (http://depts.washington.edu/disteche/images/healthsciencesmap.pdf). The Health Sciences Building is where many of your classes will be held. It is a very confusing building! You are highly encouraged to locate your classrooms in advance of the first day of class.

☐ **Attend school and departmental orientations.** Attendance to the Program Orientation is required for all entering students. Typically it is held the week prior to the beginning of Autumn Quarter.

☐ **Attend the TA/RA Conference sessions that are relevant to you.** The conference schedule is at the Center for Teaching and Learning website: http://www.washington.edu/teaching/programs/ta-ra-conference/.

APPENDIX B. CAMPUS RESOURCES

Office	Phone	Email
Childcare Assistance Program & Student Parent Resource Center	206-543-1041	*stuparrc@uw.edu*
Disability Resources for Students	206-543-8924	*uwdrs@uw.edu*
Foundation for International Understanding Through Students	206-543-0735	*info@fiuts.org*
Graduate School	206-543-5900	*uwgrad@uw.edu*
Hall Health Primary Care Center	206-685-1011	*hhpccweb@uw.edu*
Husky Card Account & ID Center	206-543-7222	*huskycrd@uw.edu*
Husky NightWalk	206-685-WALK	
International Students Services	206-221-7857	*uwiss@uw.edu*
Intramural Activities Building (IMA)	206-543-4590	*ima@uw.edu*
Libraries Information	206-543-0242	*libquest@uw.edu*
Ombud	206-543-6028	*ombuds@uw.edu*
Parking and U-PASS Information	206-221-3701	*ucommute@uw.edu*
Police, University	206-543-0507	*uwpolice@uw.edu*
Q Center	206-616-7296	*qcenter@uw.edu*
Registrar	206-543-5378	*registrar@uw.edu*
Residence Classification	206-543-5932	*resquest@uw.edu*
South Campus Center	206-543-0530	*hsbrooms@uw.edu*
Student Activities Office	206-543-2380	*sao@uw.edu*
Student Counseling Center	206-543-1240	
Student Financial Aid	206-543-6101	*osfa@uw.edu*
Student Fiscal Services	206-543-4694	*sfshelp@uw.edu*
Student Legal Services	206-543-6486	*slsuw@uw.edu*
Student Union Building (HUB)	206-543-1447	*thehub@uw.edu*
UW Technology	206-221-5000	*help@uw.edu*
Visitor's Information Center	206-543-9198	*uwvic@uw.edu*
Waterfront Activities Center	206-543-9433	*h2ofront@uw.edu*

APPENDIX C. STUDENT PROGRESS AND PLANNING FORM

PLEASE COMPLETE THIS FORM (AND ATTACH YOUR UPDATED CV) AND DISCUSS WITH YOUR ACADEMIC ADVISOR/CHAIR. THEN RETURN ALL TO THE GRADUATE PROGRAM MANAGER AT **GHPHD@UW.EDU** BY THE END OF SPRING QUARTER ANNUALLY. YOU MAY ALSO WRITE "N/A" IF YOU DO NOT HAVE AN ANSWER TO SECTIONS II-IV.

Student:_____ Date:_____

Track: _____

Advisor or Chair:_____

Dissertation or Research Topic:_____

SECTION 1: ACADEMIC PROGRESS

GAPs of coursework, grades progress of the student to date on coursework?

On track to completing coursework?

1. Please identify any gaps in coursework material, grades of concern, and progress of the student? Are you on track for completing coursework?

2. Program Competencies are important components to benchmark student's success as they pursue their doctoral education. As you continue your coursework, research, and dissertation, please check off which educational component has successfully met the competencies listed below. In the learning outcomes section, please list what specific courses or actions have helped you meet the competency requirement. This section of the form should be discussed and filled out between the advisor and student quarterly.

		Evaluation Opportunity					
Competencies	**Learning Outcomes**	**Coursework**	**Preliminary Exam**	**General Exam-PDP**	**General Exam- Oral**	**Research Project**	**Other (explain)**
Discuss and evaluate the major issues confronting global health, including their levels and trends, their determinants, and their effect on individual and populations.							
Describe, evaluate and apply the methods and metrics used in the Global Burden of Disease Study and alternative summary measures of population health.							
Develop in-depth skills to design, implement, monitor and/or evaluate health programs and health systems, including their inputs, outputs, effectiveness, cost-effectiveness, and financial management.							
Describe the biology of major global health diseases, and differentiate among the pathogenesis of diseases, infectious disease transmission modes, genetic susceptibility, nutritional concepts and the biological basis of major biomedical public health interventions.							
Explain and assess the functions, operations, processes and performance of health systems, including critical decision-making and priority-setting mechanisms.							

Competencies	Learning Outcomes	Coursework	Preliminary Exam	General Exam-PDP	General Exam- Oral	Research Project	Other (explain)
Analyze, explain and assess the role of global institutions, international non-governmental organizations and major funders and review their impact on global health.							
Identify and differentiate the principles of financing in global health and health systems at the macro-level and the micro-level.							
Critically appraise the current literature, evaluate the evidence, synthesize findings, draw inferences, and apply theoretical and conceptual models from a range of relevant disciplines to global health.							
Effectively collect, collate, synthesize, analyze and assess the quality of global health data, including primary and secondary data from health information systems and a variety of other sources.							
Acquire qualitative, quantitative, operations research and modeling skills and apply them to developing new innovative solutions for global health problems.							
Ensure the ethical and responsible conduct of research in the design, implementation and dissemination of global health research.							

Competencies	Learning Outcomes	Coursework	Preliminary Exam	General Exam-PDP	General Exam- Oral	Research Project	Other (explain)
Develop culturally-relevant professional leadership skills to work collaboratively, and to motivate and inspire others to help solve global health problems.							
Conduct independent research that is of publishable quality and is characterized by conceptual and methodological rigor, as well as practical value, and which demonstrates expertise in global health research.							
Critically appraise grants and participate in the grant writing and review process.							
Effectively communicate research findings and their implications to appropriate academic, professional, policy, and lay audiences.							
Demonstrate skills critical to teaching and mentoring.							

SECTION II: YEAR IN REVIEW

1.

A) List your research projects that have been conducted under faculty guidance. List the products that have been created. This can be accomplishments, traineeships, research assistantships, teaching assistantships, or other jobs and detailed tasks related to research.

B) If you received funding through a RA/TAship, indicate your specific deliverables within that time period (e.g. projects and publications).

Example:

Research Assistantship
R01 A1099974 (PI: Carey Farquhar) 9/3/13-6/12/14
NIH/PEPFAR

Assisted Partner Notification to Augment HIV Treatment and Prevention in Kenya.

In the proposed study, we will notify and offer HIV testing to partners of newly diagnosed HIV-positive individuals, measure the number of people tested and linked to HIV care through this program, and determine its cost-effectiveness.
Research Duties:

- Development of monitoring and evaluation tools for HIV program
- Training in the field for primary data collection

List your research projects for the next six months: traineeships, teaching assistantships, research assistantships, or other jobs and detailed tasks. List your funding sources for the next academic year.

Example:

Teaching Assistantship (Autumn 2014)

GH 511 Problems in Global Health, Steve Gloyd 9/24/14-12/12/14

Teaching duties:

- Manage 70 person breakout session
- Grade homework assignments and papers
- Answer questions regarding critical problems in Global Health, specifically the sections on international agencies and human resources within health.

2. List papers that have been published since your last review period. If you are preparing for submission to journals and the status of your submitted papers, below and on your CV. (i.e., In Progress; Submitted; Accepted/In Press; Published)

Example:

Phillips, **D**., Lozano, R., Naghavi, M., Atkinson, C., Gonzalez-Medina, D., Murray, CJL., Lopez, A. "A composite metric for assessing data on mortality and causes of death: the Vital Statistics Performance Index. *Population Health Metrics 2014, 12:10*", Published 4/15/2014

3. Describe research dissemination since the last review period. This would include seminar presentations and conferences, as well as if you submitted and abstract or presented a poster/presentation.

Example:
January 22, 2014- XIV International AIDS Society Conference, Sydney, Australia. Poster Presentation. Major breakthrough in HIV prevention research as well as new frontiers for HIV treatment.

4. Describe plans for research dissemination for the next year. This would include seminar presentations and conferences, as well as if you submitted and abstract or presented a poster/presentation. Describe how you will fund travel.

Example:
September 22, 20X5- XIV International AIDS Society Conference, Sydney, Australia. Poster Presentation. Major breakthrough in HIV prevention research as well as new frontiers for HIV treatment. *UW DGH travel award and funding from R01 A1099974 grant.*

SECTION III: PROFESSIONAL DEVELOPMENT

5. In the next 12 months, please describe professional development plans including teaching assistantships, pedagogical training, conferences to attend, experts consulted, continuing education and methods workshops, journal article and grant reviews, etc. Also, include plans for travel and how you will fund it.

SECTION IV: FUNDING

6. Describe future funding needs and possible funding sources. Please mention the funder's name, title, organization, and grant, if applicable.

Advisor's Comments

Overall assessment of progress (CIRCLE one number):

1	/	2	/	3	/	4	/	5
Poor Progress		Fair Progress		Good Progress		Very Good Progress		Exceptional Progress

Student Signature/Date_____

Academic Advisor Signature/Date_____

APPENDIX D. GENERAL EXAM CHECKLIST

BEFORE BEGINNING THE GENERAL EXAM (WRITTEN AND ORAL) PROCESS, YOU ARE RESPONSIBLE FOR KNOWING THE UW GRADUATE SCHOOL'S DOCTORAL DEGREE POLICIES: HTTP://WWW.GRAD.WASHINGTON.EDU/POLICIES/DOCTORAL/.

THE FOLLOWING SHOULD BE DONE BEFORE YOU SCHEDULE THE GENERAL EXAM

- ☐ Complete preliminary exam (offered every September)
- ☐ Complete course requirements for degree

THE FOLLOWING MUST TAKE PLACE BEFORE THE ORAL GENERAL EXAM

- ☐ Your Doctoral Supervisory Committee must be established formally. Send the names of your committee members including the Chair, GSR and other members* and the tentative quarter of your oral exam to the Program Manager so it can be submitted to the UW Graduate School.

  *Please note that only one of the committee members is permitted not to be appointed as Graduate Faculty.

- ☐ Once your Doctoral Supervisory committee is established, set up a meeting to discuss your preliminary dissertation proposal.
- ☐ Take the written General Exam. This is administered by the students Doctoral Supervisory Committee and is generally a 7 to 14 day take home exam with 4-7 questions. The student's committee will determine the questions and time period.
- ☐ Determine a date for your Oral General Exam suitable for the schedule of your GSR and committee.
  - At least four committee members must attend the General Examination, including the Chair and the Graduate School Representative (GSR) and one additional Graduate Faculty member.
- ☐ Complete the "General Exam Request" at http://www.grad.washington.edu/mygrad/student.htm at least three weeks prior to the exam, if possible. If not, email the Program Manager.
  - To make changes to a submitted request, contact the Program Manager, not the graduate school.
- ☐ Warrant: The program manager will email you the "warrant" for your Oral Exam and the GSR report. Print them; give the warrant to your chair and the report to your GSR at the exam. (Email the warrant to any members who will be present by audio/video conferencing).

THE FOLLOWING MUST TAKE PLACE AFTER YOUR ORAL EXAM

- ☐ Have all committee members who are present sign the warrant. The Chair must indicate the exam outcome on the warrant. If a member is present by audio or video conferencing, he/she must email the chair and that he/she was present by audio/videoconferencing the entire time and his/her vote.
- ☐ You must submit the original signed warrant to the Program Manager before 5:00PM on the last day of the quarter. Earlier is preferred, drop it off with the Program Manager at Harris Hydraulics.
- ☐ You will become a candidate the quarter after passing the oral general exam. If you pass between quarters, you will become a candidate the quarter after next.

APPENDIX E. FINAL EXAM CHECKLIST

BEFORE BEGINNING THE FINAL EXAM (DISSERTATION DEFENSE) PROCESS, YOU ARE RESPONSIBLE FOR KNOWING THE UW GRADUATE SCHOOL'S DOCTORAL DEGREE POLICIES: HTTP://WWW.GRAD.WASHINGTON.EDU/POLICIES/DOCTORAL/.

THE FOLLOWING SHOULD BE DONE BEFORE YOU SCHEDULE YOUR DISSERTATION DEFENSE

- ☐ Complete course requirements for degree
- ☐ Complete Preliminary Exam
- ☐ Set up your Doctoral Supervisory Committee – minimum of four members*

  *If your committee has changed, please let the Program Manager know
- ☐ Complete General Written and Oral Exam
- ☐ Have a formal committee meeting, where each member must be in agreement that you should proceed with writing your dissertation

THE FOLLOWING MUST TAKE PLACE BEFORE THE DISERTATION DEFENSE

- ☐ Set a date for the Final Exam with your supervisory committee
  - At least four members must be present at your final exam. These include the Chair, Graduate School Representative (GSR), and one additional Graduate Faculty member. The fourth member is determined by you.
- ☐ Set up the Reading Committee – minimum of three members, consisting of:
  o Chair
  o 2 other supervisory committee members
- ☐ Present your reading committee with your dissertation
  - Your reading committee must agree that the work described is appropriate for fulfillment of the doctoral degree and that the dissertation is in good enough shape that you will be able to make the necessary changes prior to the end of the quarter. The full committee must then formally agree to the date and time of your exam before you schedule your final examination online. Please consult with the Program Manager for options if it is not possible to have four members attend.
- ☐ Schedule your Final Exam
  - This includes finding a room and confirming with your committee they are available to attend.
  - Complete the "Final Exam Request" at http://www.grad.washington.edu/mygrad/student.htm at least three weeks prior to the exam, if possible. If not, email the Program Manager.
- ☐ Warrant: The program manager will email you the "warrant" for your final exam. Print it; give the warrant to your chair at your final exam.

THE FOLLOWING MUST TAKE PLACE AFTER YOUR DISSERTATION DEFENSE

- ☐ Have all committee members who are present sign the warrant. The Chair must indicate the exam outcome on the warrant. If a member is present by audio or video conferencing, he/she must email the chair and say that he/she was present by audio/videoconferencing the entire time and his/her vote.
- ☐ You must submit the original signed warrant to the program manager before 5:00PM on the last day of the quarter. Earlier is preferred, drop if off with the Program Manager at Harris Hydraulics.