Rollins School of Public Health
Overview of Water, Sanitation, and Hygiene (WASH) Coursework

BIOLOGY							
Courses	**Term**	**Credits**	**Suitable for Years**		**Prerequisite**	**Overview**	**Instructor**
			Y1	**Y2**			
EH 545 Introduction to Environmental Determinants of Infectious Disease,	Spring	3	Yes	Yes	None	This course covers the many different ways that the environment influences the transmission and spread of infectious diseases in humans. We take a broad definition of "the environment", considering air, water, soil, animal, and human influences, with case studies on each of these environmental factors. The course will also cover a variety of methods used in the study of infectious, including epidemiology, mathematical modeling, risk analysis, social science, ecology, and molecular biology. The theme of this course is "Think like a pathogen"—students will learn to think from the perspective of a pathogen trying to maximize its fitness over both short- and long-term time scales	TBD
GH 564: International Infectious Disease	Spring	2	GH ONLY	GH Only	None	Offers an epidemiological, clinical and public health perspective of selected acute infectious diseases of current national and international interest. Emphasizes the agent, methods of transmission, the host, role of surveillance, and methods of control and prevention.	TBD
GH 516: Global Perspectives in Parasitic Diseases	Spring	3	Yes	Yes	EPI530 may be taken concurrently	Focuses on prevalent parasitic infections seen in this country as well as those seen primarily abroad. Topics include parasite lifecycles, immunology, diagnostic methods, clinical manifestations, treatment and follow up, complications, epidemiology, prevention and control, methods of transmission, and future research priorities	TBD
GH 517/EPI 517: Case Studies in Infectious Disease	Fall	2			Prerequisites/concurrent: EPI 504 or EPI 530 and BIOS 500 or permission of instructor	Provides training in the investigation, control, and prevention of infectious diseases by both descriptive and analytic epidemiological techniques. Students work with infectious diseases of national and international interest. Cross-listed with EPI 517..	Bradley

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			Y1	**Y2**			
GH 518 / EPI 562: Emerging Infectious Diseases	Spring	2	Yes	Yes	Spring. Prerequisite/concurrent: EPI 504 or EPI 530 or permission of instructor. Previous course work in microbiology strongly preferred.	Examines factors that contribute to the emergence and re-emergence of infectious diseases and provides a framework for assessing the public health threat from infectious diseases and for recommending an appropriate response. Fundamental principles of infectious disease surveillance and epidemiology, as well as pathogenesis, are addressed. **This course may be used for elective OR biology credit.**	TBD
GH 580: Environmental Microbiology: Control of Food and Waterborne Diseases	Spring January short course	2	Yes	Yes	None	Introduction to waterborne and foodborne diseases. Covers basic microbiology and epidemiology of enteric diseases, including descriptions of outbreaks and surveillance systems within the US and the global burden of disease. Features lectures from CDC leaders in enteric diseases.	Moe

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METHODS							
Courses	**Term**	**Credits**	**Suitable for Years**		**Prerequisite**	**Overview**	**Instructor**
			Y 1	**Y2**			
DATA 530: Introduction to Geographic Information Systems	Fall & Spring	2	Yes	Yes	None	This course introduces the use of geographic information systems (GIS) in the analysis of public health data. We develop GIS skills through homework and case studies, and particularly address basis GIS operations such as buffering, layering, summarizing, geocoding, digitizing, and spatial queries. ****Students must tell instructor that they are in the WASH Certificate Program so the instructor can arrange for the use of a WASH dataset. This course may used as Methods or Elective for Certificate Credit**	Team
DATA 532: Advanced Geographic Information Systems	Fall & Spring	2	Yes	Yes	DATA 530	This course introduces the use of geographic information systems (GIS) in the analysis of public health data. We develop GIS skills through homework, quizzes, and a case study. Specific skills include map layouts, visualization, and basic GIS operations such as buffering, layering, summarizing, geocoding, digitizing and spatial queries.****Students must tell instructor that they are in the WASH Certificate Program so the instructor can arrange for the use of a WASH dataset. This course may used as Methods or Elective for Certificate Credit**	Edwards
EH 548 Research Methods for Studies of Water and Health	Spring	3	Yes	Yes	None	This hands-on course covers methods needed to carry out field studies focused on water and health. Through lecture and laboratory exercises, students will learn critical skills in measuring water quality exposure assessment and waterborne disease health outcomes that will enable them to conduct their own field studies and analyze the resulting data. The focus will be on issues of microbiological contamination in developing countries, but chemical contamination and domestic cases will also be covered.	Wolfe

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METHODS							
Courses	**Term**	**Credits**	**Suitable for Years**		**Prerequisite**	**Overview**	**Instructor**
			Y1	**Y2**			
GH 522 Qualitative Methods - Data Analysis	Fall	Yes	yes	Yes	Pre-requisite of GH 521 or instructor permission. If you have not or are not currently taking GH 521, you must email the instructor before enrolling. Second year GH students can enroll through March 29. GH, GLEPI and GEH students through April 2. All others may enroll AFTER April 2.	This course provides students with the principles and skills for analyzing qualitative data. Students will learn how to assess data quality, prepare data for analysis, use different analytic techniques, and write and present data. Students will learn analytic techniques through guided classroom activities, lab sessions using MAXQDA software and structured assignments. No data are required, we provide class data sets, but students can use qualitative data collected during their summer applied practice experience if suitable. Each student will work with an individual data set in course assignments.	Hennink
EPI 569 Concepts and Methods in ID Epidemiology	Fall	3	No	Yes		Prerequisites: EPI 530, EPI 540, EPI 534, and experience using R. The course will provide an overview of the history, concepts and analytical methods that specifically apply to the study of infectious diseases. Topics covered include measures of frequency, burden and natural history; immune-epidemiology; vaccine epidemiology; methods for emerging infectious diseases; fundamentals of modeling and the application of classic epi methods to infectious diseases.	Lopman, Nelson, Rogawski-McQuade

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METHODS							
Courses	**Term**	**Credits**	**Suitable for Years**	**Prerequisite**	**Overview**	**Instructor**	
			Y1	**Y2**			
GH 580: Environmental Microbiology: Control of Food and Waterborne Diseases	Spring January short course	3	Yes, preferred to guide practicum	Yes	None	Introduction to waterborne and foodborne diseases. Covers basic microbiology and epidemiology of enteric diseases, including descriptions of outbreaks and surveillance systems within the US and the global burden of disease. Features lectures from CDC leaders in enteric diseases. **This course may be used for Biology or Methods for the Certificate requirements**	Moe + TEAM

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ELECTIVES							
Courses	**Term**	**Credits**	**Suitable for Years**		**Prerequisite**	**Overview**	**Instructor**
			Y1	**Y2**			
DATA 530: Introduction to Geographic Information Systems	Fall & Spring	2	Yes	Yes	None	This course introduces the use of geographic information systems (GIS) in the analysis of public health data. We develop GIS skills through homework and case studies, and particularly address basis GIS operations such as buffering, layering, summarizing, geocoding, digitizing, and spatial queries. ****Students must tell the instructor that they are in the WASH Certificate Program so the instructor can arrange for the use of a WASH dataset. This course may used as Methods or Elective for Certificate Credit**	Team
DATA 532: Advanced Geographic Information Systems	Fall & Spring	2	Yes	Yes	DATA 530	This course introduces the use of geographic information systems (GIS) in the analysis of public health data. We develop GIS skills through homework, quizzes, and a case study. Specific skills include map layouts, visualization, and basic GIS operations such as buffering, layering, summarizing, geocoding, digitizing and spatial queries. ****Students must tell the instructor they are in the WASH Certificate Program so the instructor can arrange for the use of a WASH dataset. This course may used as Methods or Elective for Certificate Credit**	Edwards
EH /GH 582: Global Climate Change: Health Impacts and Response	Fall	2	Yes - priority for Climate and Health Certificate students until a certain date, then others may enroll	Yes - priority for Climate and Health Certificate students until a certain date, then others may enroll	None	This course will explore the public health effects of global climate change, epidemiologic and other methods for understanding and studying these effects, the public health adaptation response, and potential mitigation efforts and activities. Public health responses will be discussed with particular focus on global health issues. The course will emphasize a practical approach to vulnerability and risk assessment, and students will develop skills assessing the risks of particular climate-related health impacts.	Scovronick

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ELECTIVES							
Courses	**Term**	**Credits**	**Suitable for Years**		**Prerequisite**	**Overview**	**Instructor**
			Y1	**Y2**			
EH 586 Advanced Seminar in Climate Change and Health	Spring	2	priority for Climate and Health Certificate students until a certain date, then others may enroll	priority for Climate and Health Certificate students until a certain date, then others may enroll	Recommended prerequisite: EH 582/GH 582.	Building on EH/GH 582, this course offers an advanced examination of climate and health research and solutions. On the research side, this course will use an in-depth climate health impact assessment study to demonstrate scientific premise, study design, data access and processing, research methodology, results visualization and interpretation. On the solutions side, we will unpack the history and current state of play of global and national climate policy while also diving deep into state and local efforts. In addition, we will pursue emerging topics related to climate change research and policy. Throughout the semester, students will work on a project that will contribute to the Georgia Climate Project, a multi-university consortium co-founded by Emory. Through this effort we will apply systems thinking tools to propose strategies and identify stakeholders important for implementing climate solutions	TBD

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ELECTIVES							
Courses	**Term**	**Credits**	**Suitable for Years**		**Prerequisite**	**Overview**	**Instructor**
			Y1	**Y2**			
EH 544 - Design, delivery, and assessment of WASH in schools' programs	Spring	7	Yes	Yes	None	This course is a collaboration between Emory University and UNICEF. The purpose of this course is to support applied learning on developing, executing, and evaluating sustainable and inclusive WASH in Schools interventions in collaboration with local, sub-national, and national stakeholders. The course includes 10 online modules taught live every other week and a final case study assignment. The course will support participants to identify areas of concern, advocate for improved WASH conditions, select appropriate behavior change and technology approaches, and monitor program outputs and outcomes. Course participants will include MPH students, UNICEF filed officers, government stakeholders, and other sectorial stakeholders and is designed to ensure active participation and sharing of experience and information between participants.	TBD
EH 544 Environmental Health in Low- and Middle-Income Countries: Disease Burden, Causes, and Interventions	Spring	2	Yes	Yes	None	Pneumonia, diarrhea and malaria are leading killers of young children in low-income settings, collectively accounting for more than a quarter of child deaths in tropical settings. These diseases and other respiratory and enteric infections and vector borne diseases are associated with environmental risks at the household level: unsafe water, poor sanitation and hygiene, cooking with solid biomass, and mosquitoes and other vectors. In this course, students will explore these risks, the sources of exposure, the associated disease burden, and the principal disease control strategies and evidence of their effectiveness. They will examine policies and practices of international organizations, governments, and implementers seeking to address these challenges	Clasen

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ELECTIVE COURSES							
Courses	**Term**	**Credits**	**Suitable for Years**		**Prerequisite**	**Overview**	**Instructor**
			Y1	**Y2**			
EPI 569: Concepts and Methods in Infectious Disease Epidemiology	Fall	2	Yes	Yes		Fall. Prerequisites EPI 517, EPI 530, and EPI 540 or instructor permission. The course will provide an overview of the history, concepts and analytical methods that specifically apply to the study of infectious diseases. The course covers a range of methodological approaches and concepts for infectious disease epidemiology including natural history, household transmissions studies, concepts of dynamic modeling, sero-epidemiology vaccines and vaccine epidemiology, molecular epidemiology and pathogen strain dynamics, and emerging infectious diseases.	TEAM – Lopman, Rogawski-McQuade, Nelson
EPI 517/GH 517: Case Studies in Infectious Disease Epidemiology	Fall	2			EPI 504 or EPI 530 cross listed with EPI 517	Provides training in the investigation, control, and prevention of infectious diseases by both descriptive and analytic epidemiological techniques. Students work with infectious diseases of national and international interest. **This course may be used for elective OR biology credit.**	H Bradley
EPI/GH 562: Emerging Infectious Diseases	Spring	2	Yes	Yes	EPI 504 or EPI 530 or permission of instructor	Spring. Prerequisite/concurrent: EPI 504 or EPI 530 or permission of instructor. Previous course work in microbiology strongly preferred. Examines factors that contribute to the emergence and re-emergence of infectious diseases, and provides a framework for assessing the public health threat from infectious diseases and for recommending an appropriate response. Fundamental principles of infectious disease surveillance and epidemiology, as well as pathogenesis, are addressed. **This course may be used for elective OR biology credit.**	TBD

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ELECTIVE COURSES							
Courses	**Term**	**Credits**	**Suitable for Years**		**Prerequisite**	**Overview**	**Instructor**
			Y1	**Y2**			
GH 529: Water and Sanitation in Developing Countries	Fall	2	Yes, preferred	Yes	None	The course provides students with techniques needed to develop, evaluate, and sustain successful drinking water and sanitation interventions for developing countries. The course focuses on practical field and laboratory methods needed for different stages of projects, including assessment of perceived and actual need, alternative strategies for different environmental settings, assessing cost and financial sustainability of projects, laboratory and field techniques for assessing exposure to microbial and chemical agents, and measuring health outcomes (for baseline or effectiveness assessment). This course includes synchronous/asynchronous lectures, in-class activities, live/online discussions, group projects, case studies, a laboratory exercise, and a final project that integrates learning objectives.	Moe
GH 564: International Infectious Disease	Spring	2	GH ONLY	GH Only	None	Offers an epidemiological, clinical and public health perspective of selected acute infectious diseases of current national and international interest. Emphasizes the agent, methods of transmission, the host, role of surveillance, and methods of control and prevention. **This course may be used for elective OR biology credit.**	Bednarcyzk

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FOR ALL CERTIFICATE STUDENTS –

1. **Students may not count required coursework for their degree program towards a certificate,** except for electives. The RSPH catalog lists all degree program requirements by Department.
2. **HDGH students – please note that if a Methods course counts as CORE HDGH curriculum, you will be required to take a separate Methods to meet Certificate Requirements**
3. **If you are enrolled in two (or more) Certificates, you may double count for CERTIFICATE credit only**

Examples of what cannot "double count" include:

1. For GH or Global Epidemiology students' classes that are being used to fulfill the "GH Methods" Requirement of their degree. The most overlap in these requirements are seen in WASH and CHE.
2. For any Epidemiology or Global Epidemiology students, classes that are fulfilling the "Substantive" or "Methods" selective may not be used towards a certificate.
3. For EH and GEH students, EH 520, "Toxicology," may not be used as an elective course for GME or any other certificate program.
4. For HPM students, HPM 502 may not be used to count towards any certificate requirements.
5. For BSHES students, no BSHES required courses such as BSHES 532, BSHES 538, or BSHES 539 can count towards any certificate requirement.
6. Students who are pursuing multiple certificates, may "double count" elective courses towards two certificates. For example, if a GH MPH student takes GH 560: Monitoring and Evaluation, and it is not being used towards the GH Methods Requirement, it could be used as a course for both CHE and WASH Certificate requirements.

WASH Students MUST complete a WASH ILE and APE/Practicum. If the student is NOT being supervised by CGSW Faculty or Member, the student must fill out a Provisional Approval Form and receive approval from Dr. Christine Moe, CGSW Director. Without this provisional approval, there is no guarantee the Capstone or Thesis and Practicum will fulfill the WASH Certificate Requirement. Please submit the form to Kathleen Peters, WASH Certificate Coordinator at kpeter5@emory.edu

Please contact your ADAP or Certificate Coordinator(s) with questions/concerns.

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