# 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** | | | |
| **EHS 750:** Environmental Determinants of Infectious Diseases | 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. **This course may be used for elective OR biology credit.** | Bednarcyzk |
| **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 | Paulina Rebolledo Esteinou |
| **GH 517/EPI 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.** | Spaulding/ Fairley |

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

| BIOLOGY | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GH 518 / EPI 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.** | Fridkin |
| **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 |
| **GH 517/EPI 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.** | Spaulding Fairley |

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

| METHODS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Courses** | **Term** | **Credits** | **Suitable for Years** | | **Prerequisite** | **Overview** | **Instructor** |
| | | | **Y 1** | **Y2** | | | |
| **EH 548**: Research Methods for Studies of Water & Healt**h** | 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. | M. Wolfe |
| **GH 521:** Qualitative Research | Spring | 3 | Yes, Preferred to guide practicum | Yes | Mandatory for GH Core Curriculum – GH students will be required to take non-core mandated Methods courses for Certificate Credit | This course provides students with the theoretical principles and practical skills for conducting qualitative research. Weekly sessions are focus on different tasks in the qualitative research process, including theory and concepts, qualitative research design, ethical challenges, data collection methods (Interviewing, group discussions, observation), and applying rigor in qualitative research. We describe the challenges of applying qualitative methods in international settings. This course is a prerequisite for the fall course on Qualitative Data Analysis (GH525). | M Hennink |

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

| METHODS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Courses** | **Term** | **Credits** | **Suitable for Years** | | **Prerequisite** | **Overview** | **Instructor** |
| | | | **Y1** | **Y2** | | | |
| **GH 522:** Qualitative Data Analysis | Fall | 3 | No | Yes, best after practicum | Mandatory for GH Core Curriculum – GH students will be required to take non-core mandated Methods courses for Certificate credit | Students will learn the theoretical principles and practical skills for analyzing qualitative data. The course is intended for second year students who have completed a course in qualitative research methods (e.g. GH522) and collected qualitative data during their summer practicum. However, students without their own data may still register and use a class data set. Students will learn techniques for analyzing qualitative data through guided classroom activities, lab sessions and structured assignments. Each student will work with their own data in course assignments. The course will provide an overview of the theoretical principles of qualitative data analysis, and practical tasks of data preparation, data analysis, writing and presenting data. The course will also provide students with an understanding of the role of software in analyzing qualitative data and develop skills in using analysis software weekly. | Hennink |
| **GH 512**: Monitoring and Evaluation | xxxxx | 3 | No | Yes | Mandatory for GH Core Curriculum – GH students will be required to take non-core mandated Methods courses for Certificate credit<br><br>GH/GEH/GLE PI Students Only. Asynchronous Lab Component | Teaches technical skills to conceptualize and design process and impact evaluations of international public health programs or projects. Helps students understand the role of monitoring and evaluation in policy analysis, planning, program design and Management<br>THIS COURSE IS NOT OFFERED 2023-2024 | J McGriff |

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

| METHODS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Courses** | **Term** | **Credits** | **Suitable for Years** | | **Prerequisite** | **Overview** | **Instructor** |
| | | | **Y1** | **Y2** | | | |
| **INFO 530:** 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. | Team |

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

| ELECTIVES | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Courses** | **Term** | **Credits** | **Suitable for Years** | | **Prerequisite** | **Overview** | **Instructor** |
| | | | **Y1** | **Y2** | | | |
| **EH 570:** Environmental and Occupational Health | Spring | 2 | NON-EH students must get permission – EH students get priority since this is a degree requiremen t | NON-EH students must get permission- EH students get priority since this is a degree requirement | None | This course introduces students to the major laws and regulations applicable to environmental and occupational health in the United States. We will also explore the history, politics, economics, and ethics of environmental and occupational health policy. Readings, discussion and occasional guest speakers also explore issues of equity and environmental justice. Case studies, in-class- activities and a policy analysis assignment will emphasize the challenges of environmental and occupational health policy ***"Students must tell instructor that they are in the WASH Certificate Program and arrange for a WASH-related final project in order to obtain credit for the WASH certificate"*** | Scovronick |
| **EH 582/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 |

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

| 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 | Yang Liu |
| **EH 590R -** Design, delivery, and assessment of WASH in schools' programs | Spring | 1 | 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. | Freeman |

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

| ELECTIVE COURSES | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Courses** | **Term** | **Credits** | **Suitable for Years** | | **Prerequisite** | **Overview** | **Instructor** |
| | | | **Y1** | **Y2** | | | |
| **EH 590R**<br>Planetary Health | Spring | 1 | Yes | Yes | None | Human beings are profoundly altering the natural systems of the planet, resulting in a variety of unintended population health consequences. This course explores several of the mechanisms by which humans are influencing the physical, chemical, and ecological conditions on the planet, and some of the potential consequences of those ongoing changes in systems for human societies. Although all topics presented in this course are intersectional, the first half of the class places greater emphasis on planetary health impacts of ecosystem changes, and the second half of the class places greater emphasis on the planetary health impacts of geological and atmospheric changes. Successful completion of this course will refine skills in systems thinking and regard for planetary health challenges | Fairley |
| **EH 590R:**<br>Tropical Environmental Health | TBD | 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 |

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

| ELECTIVE COURSES | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Courses** | **Term** | **Credits** | **Suitable for Years** | | **Prerequisite** | **Overview** | **Instructor** |
| | | | **Y1** | **Y2** | | | |
| **EPI 544:** Epidemiology of Foodborne and Waterborne Diseases | Fall | 1 | Yes | Yes | | Prerequisite/concurrent: EPI 504 or EPI 530. Covers the basic epidemiology of infectious foodborne and diarrheal diseases of the United States and the world. Uses the study of these diseases and outbreak investigations to develop broadly applicable epidemiologic skills. Explores dynamic relationship between changing global environment and human health—evolving and emerging pathogens, changes in food production and distribution, and changes in the human population. | Friedman |
| **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. | Lopman |
| **GEH 571:** Global Environmental Health Policy: Power, Science, and Justice | Spring | 2 | Yes | Yes | None | This seminar encourages students to explore the forces that influence the development of environmental health policy, particularly in low income countries. Using a case study approach that draws on the instructors experience in international water and sanitation, the course examines the actors, the agendas and strategies, and political, social, legal and economic systems in which they operate. Special emphasis on the role of research and scientific evidence in Environmental Health policymaking. | Clasen |
| **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 |

*Updated July 2023*

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

| ELECTIVE COURSES | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Courses** | **Term** | **Credits** | **Suitable for Years** | | **Prerequisite** | **Overview** | **Instructor** |
| | | | **Y1** | **Y2** | | | |
| **GH 517/EPI 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.** | Spaulding/Fairley |
| **GH 518 / EPI 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.** | Fridkin |
| **GH 529:** Water and Sanitation in Developing Countries | Fall | 2 | Yes, preferred | Yes | None | Lecture-style introductory class with global perspective; provides overview of WASH challenges, and describes approaches and technologies for WASH programming. Includes 6- week field and lab hands-on water sampling and testing project. Valuable preparation for students who are planning a WASH-related GFE or Practicum. | Moe |
| **INFO 532**: Principals of Geographic Information Systems | Fall & Spring | 2 | Yes | Yes | INFO 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. | Edwards |

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

**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**

**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 compete a WASH ILE (Thesis or Capstone) 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.

*Updated July 2023*