



Graduate Program in Public Health



Graduate Program in Public Health

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About the Program

The Health Sciences at Stony Brook University has established the Graduate Program in Public Health to train health and health-related professionals who wish to integrate the knowledge, skills, visions, and values of public health into their careers and provide leadership in the field. The Program leads to a Master of Public Health (M.P.H.) degree.

The Program aims to develop among students and professionals the values, commitment, knowledge, and technical skills necessary to advance the field of public health through application of the population health approach. The hallmarks of population health are an ecological understanding of the determinants of health and a systems approach to solving health problems; emphasis on proactively stabilizing and improving health among all populations; and insistence on accountability, evidence-based practice, and continuous performance improvement. The population health approach requires multi-disciplinary collaboration among scholars in the social, clinical, and basic sciences and humanities; development of comprehensive, sophisticated health information systems; and use of advanced analytical tools to examine health problems and evaluate responses to them.

The population health orientation is consistent with the traditions of public health and with recent Institute of Medicine (IOM) recommendations for public health education, although it expands upon them. For example, the IOM recommends that public health: "Adopt a population health approach that builds on evidence of multiple determinants of health...(Develop) appropriate systems of accountability at all levels to ensure that population health goals are met...Assure that action is based on evidence."

The orientation of the Program is also compatible with the educational philosophy of the Health Sciences. The Health Sciences were first offered in 1971, emphasizing the need for interdisciplinary education and collaboration, recognizing a great need for health professions to work together. In this

way, they hoped that standards and professionalism would be maintained as a result of students having the opportunity to work in a collegial atmosphere at an early stage of their education, where they would learn to respect each other and their diverse competencies.

The content of the Graduate Program in Public Health reflects the changing environment in which public health practice occurs, and recent thinking about how to respond to these changes. Public Health retains its distinct role as the specialty emphasizing prevention, with the object of its work being populations, in contrast to the historical role of medicine, dentistry, and other clinical disciplines that focus on healing, with the object of their work being individuals. "The public health professional is a person educated in public health or a related discipline who is employed to improve health through a population focus."

Since the 1980s, the three main functions of public health have been identified as assessment, policy development, and assurance. However, the knowledge and skills needed to perform these functions optimally has changed radically in light of advances in information technology and increased knowledge about the determinants of health and disease. These changes are occurring at all levels of inquiry - from the micro (genetics and microbiology) through the macro (the social sciences). Changing political, economic, demographic, and social conditions in the United States and the world make the application of new knowledge and technologies all the more important.

As one recent Institute of Medicine report states, "The beginning of the twenty first century provided an early preview of the health challenges the United States will confront in the coming decades. The system and entities that protect and promote the public health, already challenged by problems like obesity, toxic environments, a large uninsured population and health disparities, must also face emerging threats, such as antimicrobial resistance and bio-terrorism. The social,

cultural, and global context of the nation's health is also undergoing rapid and dramatic change. Scientific and technical advances, such as genomics and informatics, extend the limit of knowledge and human potential more rapidly than their implications can be absorbed and acted upon. At the same time, people, products, and germs migrate, and the Nation's demographics shift in ways that challenge public and private resources."

Recent, influential reports regarding public health education suggest ways to address the evolving training needs of public health professionals. These publications include one report issued by the Centers for Disease Control and Prevention - "Public Health's Infrastructure" - and three reports from the Institute of Medicine - "Who Will Keep the Public Healthy?"; "The Future of Public Health in the 21st Century"; and "Crossing the Quality Chasm." The recommendations in these reports challenge new public health programs to train public health leaders to be boundary spanners - able to use the new tools and knowledge available in order to formulate solutions to the complex public health problems facing us. "Public health professionals have a major role to play in addressing these complex health challenges, but in order to do so effectively, they must have a framework for action and an understanding of the ways in which they do affect the health of individuals and populations."

These recent recommendations regarding public health can be synthesized as follows. In addition to the traditional knowledge, including epidemiology and biostatistics, public health leaders need:

- An ecological understanding of the causes of poor health including, social, behavioral, environmental, occupational, demographic, policy, economic, and genetic factors as well as the interrelationship of these factors.
- A thorough understanding and appreciation of the cultural heterogeneity of populations, its impact on public health initiatives, and tools to deal with issues arising from cultural heterogeneity.
- A thorough understanding of the current system of addressing poor health - medical, dental, and public health - including organization, financing, regulation, accessibility, quality, effectiveness, and efficiency.
- An orientation toward policy, as well as programmatic, solutions to public health problems and the skills to assess, develop, implement, and evaluate policies
- An orientation favoring evidence-based decision-making and the skills to develop evidence for public health decision-making including study design and analysis of data.
- An orientation favoring accountability and continuous quality improvement in public health and the skills needed to measure accountability and assess performance;
- Informatics skills including application of information technology to obtain, organize, and maintain useful data for public health decision-making.
- Leadership skills including the conceptual and analytical tools to prioritize problems and make sound decisions.

Mission and Goals

The vision of the Graduate Program in Public Health is to improve the health of populations on Long Island and in the region, State, and nation through education, research, and community service that utilizes all of the scholarly resources of Stony Brook University in a collaborative and boundary-spanning manner.

The mission of the Program is to develop among students and professionals the values, commitment, knowledge, and technical skills necessary to advance the field of public health through application of the population health philosophy.

The goals of the Graduate Program in Public Health are to:

- Develop a nationally recognized, accredited, graduate educational program in public health that instills in students the values, commitment, knowledge, and technical skills necessary to improve health through application of the population health philosophy.
- Advance knowledge in the public health field by developing an active program of population health research among faculty and students in the Program and other health-related professionals at Stony Brook University.
- Provide community partnerships of the highest quality that benefit the health of local, regional, and State populations.

To achieve its educational and community benefit goals, the Program trains public health professionals who:

- Understand the multiple determinants of health and illness including social, behavioral, environmental, demographic, occupational, policy, economic, and genetic, as well as health care.
- Appreciate the need for interdisciplinary collaboration in order to understand population health problems and develop optimal strategies to address them.
- Have the strongest analytical, conceptual, and communication skills in order to facilitate development and implementation of optimal strategies for addressing population health problems.

Accreditation

The Graduate Program in Public Health will seek accreditation from the Council on Education for Public Health (CEPH). The Program has been developed to meet the standards and criteria of the CEPH.

Center for Health Services and Outcomes Research

Cost control and quality enhancement remain elusive goals in the U.S. health care system. More and better evidence is required to help direct scarce health care resources to many competing uses, and to evaluate alternative strategies for promoting more cost effective care. In recognition of this need, the Graduate Program in Public Health has formed the Center for Health Services and Outcomes Research (CHSOR). The Center is a multidisciplinary research unit that

combines expertise in economics, statistics, epidemiology, medicine, and other clinical disciplines to address substantive issues in health care service and delivery. As part of its research mission, the Center seeks to develop joint projects with researchers at Stony Brook University and with health organizations throughout Long Island.

Center for Public Health and Health Policy Research

Increasing knowledge about the determinants of health and illness and the most effective and efficient methods of improving health is the central aim of the Center for Public Health and Health Policy Research. This population health orientation toward health improvement leads the Center to undertake projects that stabilize, maintain, and improve the health of all populations in a cost-effective manner through evaluation, monitoring, and feedback. The emphasis on cost effectiveness requires that we ask fundamental questions about health-related expenditures including “Are health expenditures and activities having a measurable impact on population health?” “Which expenditures and activities have the biggest impact on population health?” and “Are there other activities that would improve population health more?” The Center is a multidisciplinary research unit that combines expertise in economics, statistics, epidemiology, demography, and medicine and other clinical disciplines to address these substantive issues. As part of its mission, the Center seeks to develop joint projects between researchers at Stony Brook University and other health-related organizations throughout Long Island. The Center has developed an ongoing relationship with the Suffolk County Department of Health Services to study the causes of major health problems among County residents and develop policy solutions. Areas of interest including increasing access to medical care; improving opportunities to lead a healthy lifestyle; reducing environmental risks; and establishing programs to improve child health.

Admission Requirements

Although admissions requirements are rigorous, the Graduate Program in Public Health aims to develop camaraderie, cooperation, and cohesiveness among students in each cohort. For this reason, admission to the Program is during the fall semester only.

We are seeking intellectually inquisitive people from different socioeconomic, educational, racial, and ethnic backgrounds who can provide special contributions to the field of public health and the Program. The Program considers the potential contribution of each applicant to the student body and the public health field. Applicants are evaluated on academic achievement, leadership potential, professional accomplishment, and personal attributes. Excellent written and oral communication skills are expected. Fluency in more than one language is not required for admission, but it is becoming increasingly desirable for the practice of public health. The Program reserves the right to limit class size in order to maintain a faculty/student ratio that ensures a high quality academic program. Therefore, Program admission is highly selective, and all qualified applicants may not be accepted.

The admissions requirements for the Program are:

- Bachelor's degree from an accredited college or university with a 3.0 GPA or better. Admitted students usually have GPAs that are higher than 3.0. The major must have an equivalent at the State University of New York (SUNY).
- Official transcripts from all post-secondary schools. Transcripts for all degrees earned in schools outside the U.S. or Canada must be evaluated by an agency accredited by the National Association of Credential Evaluation Services. See section on International Students for more information about this process. The requirement for evaluation of transcripts is waived for graduates of foreign medical schools with a current license to practice in the U.S.
- Proof of licensure and good standing for licensed health professionals.
- Official GRE (verbal, quantitative, and analytical) scores. Applicants can submit scores from the MCAT, DAT, or GMAT instead of the GRE. This requirement is waived for applicants who have been awarded a doctoral degree from an accredited U.S. or Canadian college or university. Persons currently employed for more than three years in the public health field may request a waiver of this requirement.
- Three references from persons who can address the applicant's capacity to provide leadership in public health and complete a course of graduate study. If the applicant is a student or has graduated within the last two years, at least one letter must be from a college or university faculty member with whom the applicant has studied. If the applicant is a member of the public health workforce, at least one letter must be from a senior administrator in the organization who is familiar with his/her work.
- Two essays, no more than 500 words each:
Essay 1: How do your background, training, and experience prepare you for a leadership role in Public Health?
Essay 2: Select one of the following topics: (a) Explain how the Graduate Program in Public Health and the concentration chosen will help you achieve your short-term and long-term goals; (b) Define a time in your own life when you have identified and captured an opportunity; (c) Define a unique quality you possess; or (d) How do you expect to contribute to the improvement of health in your community?
- A personal interview, if requested by the Admissions Committee.
- Any other requirements of the Graduate School not stated here.

For international students

- International students who trained in non-English speaking schools and do not reside in an English speaking country are required to take the TOEFL exam. The expected minimum score is 250 for the Computer-Based Test or 600 for the Paper-Based Test
- International students are required to have a course-by-course educational credential evaluation completed by an agency accredited by the National Association of Credential Evaluation Services (www.naces.org). We

strongly recommend using World Education Services (www.wes.org). This evaluation provides a U.S. course equivalent including semester hours earned, course content, and corresponding letter grade for all courses listed on the international applicant's transcript. This evaluation must be completed before the application can be considered

For more information about the requirements for international students, see:
www.uhmc.sunysb.edu/studserv/applyhsc.html
and www.uhmc.sunysb.edu/studserv/international.html

The Admissions Committee considers all factors including grades, GRE scores, recommendation letters, essays, prior training, and professional experience. It is a goal of the Admissions Committee to select applicants who have the academic capability, aptitude, character, personal qualities, and commitment to provide future value to society through leadership and creative contributions to the field of public health.

In addition, the Program requires satisfactory completion of one of the following: a basic undergraduate or graduate course in statistics; an undergraduate calculus course; or an undergraduate algebra course. Also, students without a clinical background are required to demonstrate basic knowledge about the biomedical foundations of health and illness. Students without prior coursework in this area must complete an approved course in the biomedical foundations of health. The biomedical courses link on the Graduate Program in Public Health website provides a list of courses offered locally that meet this criterion. Students are admitted to the Program on the condition that this course will be completed by the end of the first semester.

Credit Transfers

All core courses must be taken at Stony Brook University, unless an equivalent was taken in an accredited public health program with a grade of B or better. All concentration courses are to be taken at Stony Brook University, unless an equivalent course, with a grade of B or better, was taken at an approved graduate program and transfer of credits is approved by the student's advisor. The student must request a credit transfer and complete the necessary forms. A maximum of nine (9) credits may be transferred.

Non-Matriculation Students

A maximum of nine (9) credits may be taken as a non-matriculated student in the Graduate Program in Public Health. Permission to enroll in courses must be obtained from the M.P.H. Admissions Committee. Applicants for non-matriculation status should be aware that this will not guarantee admission to the program.

Curriculum Overview

M.P.H. Core (22 Credits)

Course	Title	Credits
HPH 500	Contemporary Issues in Public Health	2
HPH 502	Principles of Biostatistics for Public Health OR	3
HPH 511	Biostatistics for Public Health	3
HPH 508	Health Systems Performance	3
HPH 514	Epidemiology for Public Health	3
HPH 516	Environmental and Occupational Health	3
HPH 523	Social and Behavioral Determinants of Health	2
HPH 543	Public Health Law	2
HPH 562	Data Management and Informatics	2
HPH 563	Cost Benefit and Cost Effectiveness Analysis	2

M.P.H. Selective (2 Credits)

Select one course from the Public Health Generalist Concentration. Each course may not be offered every year. Some courses are 3 credits, which will increase the Program credit hours from 45 to 46.

M.P.H. Culminating Experience (6 Credits)

Course	Title	Credits
HPH 580	Practicum	3
HPH 581	Capstone Seminar: Population Health Issues	3

M.P.H. Concentration (15 Credits)

Total Credit Hours for M.P.H. Program (45 credits)

Concentrations

Evaluative Sciences Concentration

To a greater and greater extent, the health care field has been challenged to prevent disease and disability, rather than focusing mainly on their treatment. Meeting these challenges requires benchmarking the current state of health in populations and continual evaluation of progress toward achieving health goals. The concentration in Evaluative Sciences will play a critical role in meeting these challenges by providing public health professionals with the analytical and statistical skills necessary to benchmark and evaluate health improvement initiatives in community and health care settings. The concentration includes courses in advanced biostatistics and epidemiology, survey research methods, clinical outcomes research, and health services research. There is a special emphasis on integrating cost effectiveness and cost benefit concepts into the curriculum so that resource allocation issues are considered.

The faculty has training in research design, implementation of research projects, and analysis of data as well as expertise in evaluating the performance of specific areas of the health care system. Faculty members study a variety of health issues including health care quality improvement, patient decision-making, and determinants of health and disease. Some work

with physicians to improve clinical outcomes for patients with heart disease, cancer, asthma and other conditions. Others work with health care administrators to increase efficiency in the use of health care resources in hospitals and other medical care settings. Some work with basic and clinical scientists, such as geneticists, environmental scientists, molecular biologists, and social scientists – to develop our understanding of how to prevent disease and disability.

Required Courses

Course	Title	Credits
HPH 555	Demographic Theory and Methods	3
HPH 560	Advanced Biostatistics	3
HPH 565	Health Services Research Applications	3
HPH 567	Clinical Outcomes Research	2

Selectives (Select two. Each course may not be offered every year.)

Course	Title	Credits
HPH 513	Decision Analysis	2
HPH 517	Continuous Quality Improvement Methods	2
HPH 519	Independent Study	variable
HPH 528	Survey Research Methods	2
HPH 566	Clinical Trials	2
HPH 570	Multilevel & Longitudinal Analysis	2
HPH 646	Continuous Quality Improvement in Healthcare	3
HPH 657	Demographic Economics I	3
HPH 664	Economics of Health	3
HPH 665	Health Economics	3

Or, with approval of advisor, other research methods courses in the University may be substituted.

Community Health Concentration

The Community Health Concentration prepares students for community-based work in public health. The curriculum includes courses on the theories of health behavior and health communication, as well as planning, implementing, and evaluating health programs. Students in this concentration must use their Core Selective toward the concentration.

Required Courses

(Courses from the Department of Health Care Policy and Management, School of Health Technology and Management)

Course	Title	Credits
HAS 527	Principles & Practices of Community Health	3
HAS 533	Communications & Group Dynamics	3
HAS 545	Ethics and Health Care	3
HAS 557	Planning and Evaluating Health Programs	3
HAS 559	Health Behavior and Risk Reduction	3
HAS 560	Evaluation of Community Health Programs	3

Or, with approval of advisor, other community health-related courses in the University may be substituted.

Public Health Generalist Concentration

Students in this concentration are required to take the History of Public Health & Medicine, Planning & Implementing Health Programs, Issues in Public Health Organizations, and Management Accounting & Financial Decision Analysis (9 credits total). The remaining 6 credits are selected from the following list of courses. Working with one of the Public Health Generalist advisors, students select courses that are related to their professional goals.

Required Courses

Course	Title	Credits
HPH 524	Planning and Implementing Health Programs	2
HPH 530	History of Public Health & Medicine	2
HPH 555	Demographic Theory and Methods	3

(Course from Department of Technology & Society)

Course	Title	Credits
HPH 660	Management Accounting & Financial Decision Analysis	3

Selectives (Select 6 credits from courses below. Each course may not be offered every year.)

Course	Title	Credits
HPH 504	Surveillance & Control of Infectious Diseases	2
HPH 505	Topics in Population Health Studies	0.5-3
HPH 510	Advanced Epidemiology	3
HPH 513	Decision Analysis	2
HPH 517	Continuous Quality Improvement Methods	2
HPH 519	Independent Study	variable
HPH 528	Survey Research Methods	2
HPH 542	Introduction to Global Health	2
HPH 560	Advanced Biostatistics	3
HPH 565	Health Services Research Applications	2
HPH 566	Clinical Trials	2
HPH 567	Clinical Outcomes Research	2
HPH 568	Overview of Molecular Medicine & Genomics	2

(Courses from Department of Preventive Medicine, Division of Environmental/Occupational Health)

Course	Title	Credits
HPH 644	Epidemiology of Environmental & Occupational Disorders	3
HPH 645	Occupational Health Principles	3
HPH 647	Environmental Toxicology	3
HPH 648	Industrial Hygiene	3
HPH 649	Health Physics	3
HPH 650	Safety Engineering & Management	3
HPH 651	Environmental & Occupational Health Laws & Agencies	3
HPH 652	Occupational Safety & Health for Special Groups	3

(Course from Department of Molecular Genetics & Microbiology)

Course	Title	Credits
HPH 659	Biology of Cancer	1

(Courses from School of Social Welfare)

Course	Title	Credits
HPH 620	Parameters of Social & Health Policy I	3
HPH 621	Parameters of Social & Health Policy II	3
HPH 624	Youth & Violence	2
HPH 625	Children of Chaos: The Social Worker's Role	2
HPH 626	Overview of Substance Abuse	2
HPH 630	Chemical Dependency in Special Populations	2
HPH 631	Cultural Competence: An Ingredient Enhancing Treatment Outcomes	2
HPH 632	Psychopathology & Psychopharmacology	2
HPH 633	Childhood Sexual Abuse & Long-Term Sequelae	2
HPH 634	Program Evaluation	3
HPH 635	Seminar on Family Violence	2
HPH 636	Community Analysis & Health Promotion	2
HPH 638	Qualitative Health Research Methods	3

(Course from Department of Anthropology)

Course	Title	Credits
HPH 658	Use of Remote Sensing & GIS in Environmental Analysis	3

(Courses from Department of Economics)

Course	Title	Credits
HPH 657	Demographic Economics I	3
HPH 664	Economics of Health	3
HPH 665	Health Economics	3

(Courses from Marine Sciences Research Center or Department of Technology & Society)

Course	Title	Credits
HPH 653	Introduction to Homeland Security	3
HPH 654	Nuclear Safeguards & Security	4
HPH 655	Chemical & Biological Weapons: Safeguards & Security	4
HPH 656	Risk Assessment, Regulation, & Homeland Security	4
HPH 661	Methods of Socio-Technological Decision-Making	3
HPH 662	Systems Approach to Human-Machine Systems	3
HPH 663	Waste Management: Systems & Principles	3
HPH 671	Marine Pollution	3
HPH 672	Marine Management	3
HPH 673	Groundwater Problems	3

HPH 675	Environment & Public Health	3
HPH 676	Environmental Law & Regulation	3
HPH 683	Air Pollution & Air Quality Management	3
HPH 684	Environmental & Waste Management in Business & Industry	3
HPH 686	Risk Assessment & Hazard Management	3
HPH 687	Diagnosis of Environmental Disputes	3
HPH 688	Principles of Environmental Systems Analysis	3
HPH 689	Simulation Models for Environmental & Waste Management	3

Or, with approval of academic advisor, other courses in the University related to the student's goals may be substituted

Course Descriptions

M.P.H. Core Courses

HPH 500 Contemporary Issues in Public Health: The Long Island Experience

This course will examine the role of medicine and public health in improving the health of the Suffolk County population. Students will be exposed to Field Preventive Medicine as performed by public health practitioners including investigations of infectious disease outbreaks and cancer clusters. As one of the most heavily mosquito and tick infested counties in the country, the course will emphasize arthropod-borne diseases. The impact of drinking water standards and frequently encountered contaminants such as synthetic organic compounds and pesticides will be studied. Sanitary regulations and public health law will be discussed, as will bioterrorism and the modes most threatening to residents of Long Island. Global issues will include infectious diseases and food-borne illnesses that affect morbidity and mortality worldwide.

2 credits, fall semester, Professors Zaki & Graham

HPH 502 Principles of Biostatistics for Public Health

This course provides an introduction to the study of statistics with specific applications to the field of public health. It introduces students to basic statistical concepts and emphasizes the skills needed to summarize data, interpret findings, and critically evaluate the public health literature. Concepts taught in this course include, but are not limited to, the following: summarizing data, drawing inferences, estimation, chi-squared statistics, parametric and nonparametric correlation, and linear and nonlinear regression. This course is not a pre-requisite for HPH 560 or HPH 510.

3 credits, semester varies

HPH 508 Health Systems Performance

This course introduces students to the system that we have developed to deliver health care in the United States, with international comparisons. The topics include the organization and financing of health care systems, access to health care including health insurance, regulation and policy issues, and the health care workforce.

3 credits, fall semester, Professor R. Goldsteen

HPH 511 Biostatistics for Public Health

This course is intended to provide students and researchers in public health with an introduction to the principles of statistical methods and their application in biomedical and public health research. This course includes introductions to the use of computers for statistical analysis, summarizing and exploring data, probability theory, discrete and continuous probability distributions, populations and samples, sampling distributions and statistical inference, hypothesis testing, sample size and power, two-sample comparisons, analysis of variance, association and correlation, simple linear regression and simple logistic regression. Prerequisites: high school algebra.

3 credits, fall semester, Public Health Faculty

HPH 514 Epidemiology for Public Health

This course presents basic epidemiologic concepts used to study health and disease in populations. It provides an overview of the major causes of morbidity and mortality, including methods of measurement (e.g., incidence, prevalence). Observational and experimental epidemiologic studies will be described and their advantages and disadvantages compared. The course aims for students to begin developing the skills needed to evaluate data, interpret reports, and design and conduct studies. Students will be introduced to the various areas of epidemiologic study—cancer, molecular/genetic, environmental, occupational, social and behavioral, and infectious disease/surveillance. The course comprises both lectures and small group seminars for in-depth discussions of previously assigned topics.

3 credits, spring semester, Professor O'Leary

HPH 516 Environmental & Occupational Health

This course is designed to provide the fundamentals of environmental and occupational health and to educate students on issues related to major environmental and occupational concerns. It will provide a forum for the discussion of local and national environmental and occupational public health issues. The content of the course will focus on major pollutants, their detection, impact on health, and principles of remediation. Using various teaching techniques, students will be exposed to current environmental and occupational topics and approaches to prevention and treatment. The course will emphasize the most recent research in the field.

3 credits, spring semester, Public Health Faculty

HPH 523 Social & Behavioral Determinants of Health

This course introduces students to population health as one of the organizing concepts in public health and the orientation that differentiates public health from medicine. Consistent with public health tradition, health is discussed from an ecological perspective, and the course presents current knowledge about the multiple determinants of population health including socioeconomic status, the physical environment, medical care, individual behavior, and genetics and the interaction of these factors. Also covered is the measurement of population health, sources of data, and methods for assessing population health improvements.

2 credits, summer semester, Professor Hale

HPH 543 Public Health Law

This course will deal with the role of law in public health, the history of law concerning public health, the basic legal knowledge for public health, legal basis for public health powers, the administrative law system, public health law as it relates to individual rights, control of property, substance abuse, the AIDS epidemic, laws/regulations governing public health safety; workers' compensation law related to health; environmental laws/regulations and food, drug, device, and cosmetic laws/regulations. Additionally, the individual rights and ethics of modern general public health practice in the 21st century will be discussed. Topics such as genomics, HIPAA, bioterrorism, emergent infectious diseases, public health research and issues regarding public health accountability will be explored.

2 credits, spring semester, Professor McCrary

HPH 562 Data Management & Informatics

This course provides instruction in the use of software to prepare data for statistical analysis. The focus is on database management and programming problems.

2 credits, fall semester, Professor Meng

HPH 563 Cost Benefit & Cost Effectiveness Analysis

The course will introduce the uses and conduct of cost benefit and cost effectiveness Analysis as decision-making aids in the health care research. It will provide students with an understanding of the roles and limitations of cost benefit and cost effectiveness Analysis and criteria for evaluating those studies. Critical issues regarding measuring cost and effectiveness, evaluating outcomes, discounting, and dealing with uncertainty will be discussed.

2 credits, spring semester, Professor Rizzo

The Culminating Experience

The Capstone Seminar and the Practicum are offered as tandem experiences. They combine to create the culminating experience for the proposed program.

HPH 580 Practicum

The Practicum is a planned experience in a supervised and evaluated public health-related practice setting. A journal of fieldwork and a project, with a written report, are required. Students will be expected to demonstrate their "capacity to organize, analyze, interpret and communicate knowledge in an applied manner." Health departments, as well as a variety of other local organizations, offer a wide array of potential sites for the Practicum experience.

3 credits, fall, spring, & summer semesters, Public Health Faculty

HPH 581 Capstone Seminar: Population Health Issues

This course will assist students in synthesizing the basic public health knowledge through completion of a Capstone Project. Attendance at Public Health Grand Rounds will also be required for this course. Most core and concentration course work must be complete before the student can participate in the Capstone Seminar.

3 credits, fall, spring, & summer semesters, Public Health Faculty

Evaluative Sciences Concentration (Required Courses)

HPH 555 Demographic Theory and Methods

This course introduces students to the basic theory and methods employed in the study of demography. The students will understand life table methodology, population projection, sources of demographic data, patterns in global fertility and mortality, the demographic transition, current patterns in fertility, marriage and work, abortion and contraception, and fertility/mortality interrelationships.

3 credits, spring semester, Professor Hale

HPH 560 Advanced Biostatistics

This course will discuss aspects of practice and statistical theory relevant to the design of scientific investigations in the health sciences. Topics will include sample size considerations, basic principles of experimental design, block designs, and factorial experiments, and multivariate analysis for continuous and categorical data.

3 credits, spring semester, Public Health Faculty

HPH 565 Health Services Research Applications

The course is designed to introduce students to the application of standard methods in health services research. The student will learn the principles, methods, and terminology specific to this field. Threats to validity, information bias and the methods of control will be explored. Lectures will include risk adjustment, benchmarking, outcomes and effectiveness research. This course will emphasize the theory of sampling and survey methods and their application to health service research.

3 credits, fall semester, Professor Meng

HPH 567 Clinical Outcomes Research

This course will (i) introduce the basic concepts, methods and topics in clinical outcomes research and (ii) introduce the skills necessary to evaluate the efficacy, effectiveness, and cost-effectiveness of devices, interventions, processes of care, and health care delivery systems. The specific topics to be covered include: outcomes measurement, population health assessment, valuing health outcomes, risk adjustment, case-mix adjustment methods, effectiveness, efficacy, and cost effectiveness in clinical outcomes research, and analysis methods.

2 credits, summer semester, Professor Rizzo

Community Health Concentration (Required Courses)

HAS 527 Principles & Practices of Public & Community Health

This course provides an overview of the public health system, the philosophy and purpose of public and community health, the managerial and educational aspects of public health programs, how the public health sector responds to disease prevention, environmental issues, community public health provisions and other core public and community health components. The impact of federal health care reform on the public health delivery system and the economic and fiscal implications of the system on state and local governments will be discussed. Students will analyze the critical elements of a health care system.

3 credits, semester varies, Community Health Faculty

HAS 533 Communications & Group Dynamics

This course provides a strong introduction to the structure and dynamics of working groups and teams in various health care settings. The course is designed to familiarize students with the principles of interpersonal communication and group process and to develop, enhance and strengthen skills in these areas. Students will participate in a variety of activities, including readings, case studies, and written and oral presentations that illustrate relevant principles and provide practice in their application. The knowledge and skills acquired in this course will enhance communication with patients, program participants, colleagues, community members and leaders. Students will also develop skills for facilitating small and large group discussions for teaching patients and communities and for educating special populations.

3 credits, semester varies, Community Health Faculty

HAS 557 Planning and Evaluating Health Programs

This course provides students with knowledge and skills for developing all phases of community health plans. Students gain knowledge and skills to conduct needs assessment including the use of surveys, focus groups, literature reviews, chart reviews, telephone/computer interviews and content expert consultations. Students also acquire extensive information and materials for developing implementation strategies, methods and techniques. All students are required to design a community health program utilizing the planning and implementing phases presented in the course.

3 credits, semester varies, Community Health Faculty

HAS 559 Health Behavior & Risk Reduction

The impact of behavior on the health and well-being of the public is profound and far-reaching, as the majority of the leading causes of death and disability are largely attributable to behaviors that can be modified or prevented through changes in individual, community, and/or institutional/organizational behavior. This course is designed to (1) help students acquire knowledge of theories and concepts to describe, explain, and predict health-related behaviors as well as behavioral responses to risk communication; (2) learn the skills to apply this knowledge to evaluate the effectiveness of behavioral and health communication interventions; and (3) develop a health-related behavioral intervention project proposal that includes a plan to evaluate behavior change outcomes.

3 credits, semester varies, Community Health Faculty

HAS 560 Evaluation of Community Health Programs

Addresses basic principles and practices of program evaluation including identifying the goals of a community health program; designing an evaluation plan, that can determine if program goals are achieved; implementing an evaluation plan; interacting with stakeholders, and using the results of the program evaluation to improve performance. Students are required to design an evaluation component for the community health program they developed in HAS 557: Planning & Evaluating Health Programs.

3 credits, semester varies, Community Health Faculty

Public Health Generalist Concentration (Required Courses)

HPH 524 Planning & Implementing Health Programs

This course introduces concepts and tools needed to plan and implement health programs within a public health setting. It covers evidence-based, best practices that will ensure the effectiveness and efficiency of health programs, including performance issues related to planning, developing, managing, and evaluating.

2 credits, fall semester, Public Health Faculty

HPH 530 History of Public Health & Medicine

This course explores major themes and interpretations in the history of public health and medicine since the 18th century. Particular emphasis is placed on the influence of social and cultural developments on medicine and public health, and vice versa. American developments will be placed in a broad comparative perspective including both Western and non-Western nations.

2 credits, summer semester, Professor Tomes

HPH 555 Demographic Theory and Methods

This course introduces students to the basic theory and methods employed in the study of demography. The students will understand life table methodology, population projection, sources of demographic data, patterns in global fertility and mortality, the demographic transition, current patterns in fertility, marriage and work, abortion and contraception, and fertility/mortality interrelationships.

3 credits, spring semester, Professor Hale

HPH 660 Management Accounting & Financial Decision Analysis

Fundamentals of managerial accounting with emphasis on ratio and cost accounting terms, concepts, break-even analysis, financial structure, cost analysis, opportunity costs and return calculations, replacement of assets, and cash flow management. (Cross-listed with EMP 502)

3 credits, fall semester

Selective Courses

HPH 503 Research Ethics

This course presents issues in the ethical conduct of research. Topics include data collection and management, research fraud, academic misconduct, conflict of interest, federal and institutional guidelines regarding research using human and animal subjects, vulnerable populations, confidentiality, and the Institutional Review Board (IRB).

1 credit, semester varies, Public Health Faculty

HPH 504 Surveillance & Control of Infectious Diseases

This course introduces the methods of surveillance and control of infectious diseases in the community and in health care organizations including the design, implementation, and evaluation of surveillance systems and the analysis of surveillance system data. The course focuses on infectious diseases common in the United States, but also discusses the global situation. Bioterrorism will be discussed.

2 credits, semester varies, Public Health Faculty

HPH 505 Topics in Population Health Studies

This course presents current topics and issues in population health studies.

*5 - 12 credits, semester varies, Public Health Faculty
May be repeated 1 times FOR credit.*

HPH 506 Methods for Population Health Studies

This course introduces population health studies methods and their importance for evidence-based public health practice. Topics include the design, implementation, and analysis of community surveys, qualitative studies, and evaluation studies for health programs. Sources and uses of existing data for population health studies, including census, mortality, administrative, and survey will be discussed.

2 credits, semester varies, Public Health Faculty

HPH 510 Advanced Epidemiology

This course will introduce advanced statistical methods for epidemiological investigations for infectious and non-infectious diseases. The topics include interaction, standardization of rates and ratios, conditional logistic regression, life tables, and survival analysis. Prerequisites: HPH 511 and 514 or other mathematically-oriented introduction to statistics.

3 credits, fall semester, Public Health Faculty

HPH 513 Decision Analysis

This course will focus on the principles of decision analysis and medical decision-making; the use of probabilities and utility assessment in medicine; choice and interpretation of diagnostic tests; decision tree construction and analysis; sensitivity and threshold analysis; quantifying patient preferences; and cost-effectiveness analysis. Students will learn methodologies for dealing with complex decisions both on an individual patient level and at a policy level, and will have hands-on experience in applying these to a problem of their choice.

2 credits, semester varies, Public Health Faculty

HPH 517 Continuous Quality Improvement Methods

This course introduces the principles and methods of continuous quality improvement (CQI) for public health and health care organizations including benchmarking, development of pertinent information systems, timely and regular analysis of data, and presentation of performance results. The course also discusses implementation issues including availability of relevant data and achieving administrative and staff support.

2 credits, semester varies, Public Health Faculty

HPH 519 Independent Study

Intensive reading, under supervision of one or more instructors, of material not covered in the formal curriculum, or execution of a research project under the supervision of one or more faculty members. Prerequisites: Permission of Program Director.

*1 - 6 credits, semester varies, Public Health Faculty
May be repeated 5 times FOR credit.*

HPH 521 Seminar in Evaluative Sciences

This course introduces novice researchers to the steps required to plan a clinical research project and teaches some of the most basic principles involved in each step. This 8 hour

seminar will discuss reviewing the literature and building a library; developing a research project including study design, sampling, data collection and management, data analysis, and presenting results. Grant resources and the application process; copyright rules; human subjects protection and institutional review boards (including HIPAA); and when and how to use a statistics consultant will also be introduced. Students are encouraged to use this seminar to develop their own research idea and leave the seminar with a timeline for achieving their own research goals.

.5 credit, semester varies, Public Health Faculty

HPH 526 Issues for Public Health Organizations

Not all organizational change improves upon the past and most change is difficult. This course discusses the challenges facing public health managers who are intent on implementing organizational change. Top management processes for public health leaders will be explored including strategic planning, resource allocation, decision-making, learning, and managing.

2 credits, spring semester, Public Health Faculty

HPH 528 Survey Research Methods

This course will introduce survey research methods for community populations. It will include measurement of health status and other factors related to the health of community populations including socioeconomic status, health behavior, occupation, and social support. Topics will include sampling and design strategies, instrument development, scaling, assessment of reliability, validity and responsiveness to change; principal component(s); analysis and factor analysis; and item response theory. The course will introduce students to the many existing sources of community health survey data including the recurrent national surveys such as the National Health Interview Survey.

2 credits, spring semester, Public Health Faculty

HPH 539 Global Epidemiology & Preventive Medicine

This course focuses on strategies to reduce mortality and morbidity from specific conditions. The conditions selected are mainly infectious diseases that account for the majority of preventable deaths and disability in low-income countries, especially among children. Detailed discussion of disease due to protozoa and parasites will, however, be deferred to another course. In addition, the increase in mortality from tobacco-related disease and trauma in poor countries will also be addressed.

3 credits, semester varies, Public Health Faculty

HPH 540 Medical Anthropology, Culture, & Ethics

This course focuses on how patients in non-western societies view issues related to health and disease and how medical interventions can be integrated into local beliefs and customs. Particular attention will be devoted to the role of women in improving the health status of their communities. Region-specific overviews will be provided on how history and culture have influenced health in sub-Saharan Africa and Latin America. Ethical issues related to resource allocation and

medical and public health research in low income countries will also be addressed in this course.

3 credits, semester varies, Public Health Faculty

HPH 541 Provision of Health Care in Low Income Countries

This course focuses on the practical implementation of interventions to reduce disability and premature death in low income countries. It will cover funding and organization of health care; primary health care programs; role of expatriate health workers; and emergency medical care of refugee populations.

3 credits, semester varies, Public Health Faculty

HPH 542 Introduction to Global Health

This course will provide health personnel with a basic awareness of the problems of the worlds' population with special focus on the poorest. To promote these objectives, this course has been designed to introduce medical and public health students to key population health topics from a global perspective, with special emphasis placed on the health and welfare of women and young children in low-income countries. The health impact of emergent infectious diseases will be reviewed. The design and effectiveness of foreign aid programs will be discussed. Students will be introduced to demography and the impact of population increases on the global environment. There will be discussions of the health problems of immigrants to the U.S. from tropical countries. Finally students will learn about vaccination and other safety issues related to traveling and working in the tropics.

2 credits, semester varies, Public Health Faculty

HPH 544 Development & Demography

This course focuses on broad issues of international aid and development policies that impact human health and the global environment. The course will help place the specific clinical interventions discussed in other courses into a wider socioeconomic context. Topics will include demography, poverty, health, and development; international and U.S. AID policies; and global environment for sustainable development.

3 credits, semester varies, Public Health Faculty

HPH 545 Clinical, Laboratory, & Epidemiological Parasitology & Protozoology

This is an integrated and detailed course on the subjects of parasitology and protozoology. The epidemiology, microbiology, clinical presentation, and management, as well as laboratory diagnosis, of these conditions will be covered. The human and economic impact of these conditions will be discussed. Preventive measures will be discussed in detail. It will be assumed that students have minimal or no prior knowledge of these conditions.

3 credits, semester varies Public Health Faculty

HPH 561 Design of Scientific Investigations

This course is an overview of the theory and methods relevant to health sciences research, beginning with the philosophy of scientific investigations, the role of literature in the advancement of science and moving to problem identification, formu-

lation of research questions, research design, and issues of sampling and sample selection, measurement, and analysis.

1 credit, semester varies, Public Health Faculty

HPH 564 Research Methods for Community Populations

This course will introduce the design, measurement, and analysis of research for community populations. It will include measurement of health status and other factors related to the health of community populations including socioeconomic status, health behavior, occupation, and social support. Topics will include instrument development, scaling, assessment of reliability, validity and responsiveness to change; principal component analysis and factor analysis; and item response theory. The course will introduce the many existing sources of community health information including the recurrent national surveys such as the Health Interview Survey.

2 credits, semester varies, Public Health Faculty

HPH 566 Clinical Trials

This course introduces the design, conduct, and analysis of clinical trials. Topics will include types of clinical trials, study design, treatment allocation, randomization and stratification, quality control, sample size requirements, patient consent, and interpretation of results.

2 credits, semester varies, Public Health Faculty

HPH 568 Overview of Molecular Medicine & Genomics

The course will introduce basic concepts of molecular diagnostics currently in clinical use. The principal topics to be covered include: an introduction to the human genome; principles of human genetics; microarray, genomic and bioinformatics approaches to human disease; cancer genetics; animal models of human diseases; emerging pathogens; principles of genetic testing strategies and test development; emerging molecular therapeutics; regulatory, patenting and licensing issues of relevance to drug discovery and test development.

2 credits, semester varies, Public Health Faculty

HPH 569 Modeling for Evaluative Sciences

This course will present an introduction to the methods of data mining and predictive modeling, with particular emphasis on applications to health services research and clinical outcomes research. Basic concepts and philosophy of data mining as well as appropriate applications will be discussed. Topics covered will include multiple comparisons adjustment, and predictive model building through logistic regression, classification and regression trees (CART), multivariate adaptive splines (MARS) and neural networks.

2 credits, semester varies, Public Health Faculty

HPH 570 Multilevel & Longitudinal Analysis

The course covers methods for the analysis of repeated measures, correlated outcomes and longitudinal data, including the unbalanced and incomplete data sets characteristic of health service research. Topics include ANOVA, random effects and growth curve models, and generalized linear models for correlated data, including generalized estimating equations.

2 credits, semester varies, Public Health Faculty

HPH 571 Research Synthesis & Meta Analysis

This course concerns the use of existing data to inform clinical decision-making and health care policy. The course focus is research synthesis (meta-analysis). The principles of meta-analytic statistical methods are reviewed, and the application of these to data sets is explored. Application of methods includes considerations for clinical trials and observational studies. The use of meta-analysis to explore data and identify sources of variation among studies is emphasized, as is the use of meta-analysis to identify future research questions.

2 credits, semester varies, Public Health Faculty

HPH 620 Parameters of Social & Health Policy I

Introduces students to U.S. social policy, with special emphasis on political, economic and social factors that have affected its historical development, particularly in reference to oppressed groups. Explores the relationship of social policy to social work practice (Cross-listed with HWC 509).

3 credits, fall semester, Professors Blau, Brandwein, Farrington, Lewis & Peabody

HPH 621 Parameters of Social & Health Policy II

Utilizes frameworks for social policy analysis. Explores continuing dilemmas in policy development. Stresses effects of social movements and social change on social policy (Cross-listed with HWC 510).

3 credits, spring semester, Professors Blau, Brandwein, Farrington, Lewis & Peabody

HPH 624 Youth & Violence

Examines the etiology of youth at risk for violence, using ecological and interpersonal perspectives. Family, school, and community risk factors are outlined as well as assessment, intervention and treatment issues. Successful prevention programs are highlighted (Cross-listed with HWC 541).

2 credits, semester varies, Professor Murphy

HPH 625 Children of Chaos: The Social Worker's Role

Designed to provide an understanding of the special issues and concerns surrounding work with children. Professional dilemmas and guidelines to aid practice are identified. Special issues involved in work with young children are highlighted. Although the focus is on direct work with children, a family-centered approach is presented. Practitioner roles, the impact of service settings, policy and legislation affecting this area of practice are reviewed as is the knowledge base that serves to guide practice, including formulations of practice theory and empirical research findings (Cross-listed with HWC 542).

2 credits, semester varies, Professors Finch & Lurie

HPH 626 Overview of Substance Abuse

An examination of the history and development of alcohol and substance abuse problems in the United States. Focuses on the etiology, psychopharmacology and legal ramifications of the use licit and illicit substances in our culture. Provides information on a variety of services available to drug abusers, addicted individuals and their families in the fields of prevention, education and treatment (Cross-listed with HWC 544).

2 credits, fall semester, Professors Brisbane & Murphy

HPH 630 Chemical Dependency in Special Populations

Covers alcoholism and substance abuse with populations that have been traditionally devalued and oppressed. Focuses on development of skills and sensitivity to the needs of ethnic groups, women, the elderly, the mentally ill and gay and lesbian people who are chemically dependent. Explores policy and practice issues related to these populations (Cross-listed with HWC 553).

2 credits, semester varies, Professor Murphy

HPH 631 Cultural Competency: an Ingredient Enhancing Treatment Outcomes

Demonstrates that cultural competency, like computer literacy, is a necessity. Outlines how prevention messages and treatment modalities provided within a cultural context are likely to change attitudes or redirect behaviors. There is a new wave of immigrants and a growing assertion of cultural identity by groups who were born in the U.S. Therefore, a new communication edict of cultural dialogue is fast becoming part of one's professional mandate. Hence, the ability to interact with people who are culturally different from the professional is a prerequisite to providing culturally competent services to these groups (Cross-listed with HWC 557).

2 credits, semester varies, Professor Brisbane

HPH 632 Psychopathology & Psychopharmacology

An overview of the DSM IVTR system of Classification of Mental Disorders. Emphasizes the social work component within the interdisciplinary team. Special emphasis on assessment. Introduces psychopharmacology and the social work role related to drug management including side effects, risks and changes over time. Critiques value systems involved in diagnosis and definition of disorders (Cross-listed with HWC 567).

2 credits, semester varies, Professor Lurie

HPH 633 Childhood Sexual Abuse & Long-Term Sequelae: Assessment & Intervention

Introduces students to the incidence and prevalence of childhood sexual abuse as a national problem. Covered are definition issues, sequelae during childhood, family constellation and adult sequelae. Assessment and current treatment modalities, particularly for families and offenders, will be addressed as well as ethical and legal dilemmas and the subsequent health related difficulties of this childhood trauma. Special attention is paid to the cultural dynamics in sexual abuse. Students are expected to develop an awareness of and critically analyze current research (Cross-listed with HWC 569).

2 credits, semester varies, Professor Monahan

HPH 635 Seminar on Family Violence

An overview of the phenomenon of family violence in the United States including child abuse, partner abuse and elder abuse. Explores theories of etiology, including patriarchy, intergenerational family dynamics and substance abuse. Examines programmatic approaches including the legal system and programs for batterers by utilizing guest speakers from Suffolk County agencies (Cross-listed with HWC 580).

2 credits, semester varies, Professor Brandwein

HPH 636 Community Analysis & Health Promotion

Explores diverse concepts of community, analyzes a range of community structures, processes and power relationships. Investigates contemporary models, strategies and tactics of community organizing and health promotion in the U.S. and in selected other countries; and emphasizes efforts made by poor people, ethnic minorities of color and women to organize and mobilize community groups and movements. Highlights group and community analysis and organization skills.

(Cross-listed with HWC 584).

2-3 credits, semester varies, Professor Vidal

HPH 638 Qualitative Health Research Methods

The class works as a team on a joint project. Topics include problem formulation, instrument construction, sampling strategy, interviewing, data transcription, and data analysis (Cross-listed with HWC 588).

3 credits

HPH 644 Epidemiology of Environmental & Occupational Disorders

This course will introduce students to the frequency, distribution and determining factors of environmental and occupational disease among exposed groups in the general population. It will enable the students to understand the epidemiological concept of the general and work place environments. Emphasis will be placed on teaching the skills necessary to assess data, to evaluate and critique the professional literature, and to formulate and evaluate conclusions. The course will provide basic knowledge for writing up exposure incidents or research projects (Cross-listed with CEM 522).

3 credits

HPH 645 Occupational Health Principles

This course will provide an in-depth description of the field of occupational/environmental health and safety. It will provide the historical and general principles of occupational health, focusing on prevention of occupational health and safety and how these professionals work together and communicate will be covered, as well as discussion of topics of common interest in the occupational safety and health field. (Cross-listed with CEM 525)

3 credits, semester varies

HPH 646 Continuous Quality Improvement in Healthcare

Provides basic principles associated with Total Quality Management (TQM) and Continuous Quality Improvement (CQI). Aids identification and quality problem-solving found in all healthcare organizations utilizing continuous quality improvement (CQI) tools and techniques. Through the use of case studies, current events, and textbook materials, students will learn how to identify problems, recommend improvements, and collect data to demonstrate process improvement. (Cross-listed with HAN 436)

3 credits, spring semester, Instructor Gomes

HPH 647 Environmental Toxicology

This course will assist in the understanding of toxicological concepts and principles learn basic toxicological terminology and focus on environmental toxicology issues. Formulas, chemical structures, mathematical calculations, charts and graphs will be used to illustrate concepts. Anatomy, physiology, biochemistry and pathology will also necessarily be covered as these disciplines relate to toxicological concepts, principles, and vocabulary. The course goals and objectives are to provide core knowledge in: 1) Principle in toxicology 2) Cancer related to toxic exposures 3) Organ and system toxic effects 4) Environmental Toxicological issues (Cross-listed with CEM 527).

3 credits, semester varies

HPH 648 Industrial Hygiene

The aim of the course is to assist in the understanding of industrial hygiene concepts and principles, learn basic terminology and focus in national and local environmental and occupational industrial hygiene issues. The course goals and objectives are to provide core knowledge in the following areas 1) Principles of Industrial Hygiene 2) Identification, Evaluation and Control of Hazards in the workplace 3) Industrial Hygiene Standards, Agencies and Regulations (Cross-listed with CEM 538).

3 credits, semester varies

HPH 649 Health Physics

This course will introduce concepts of radiation protection; define general terms that are used in radiation protection; define unique aspects of medical and academic radiation environments; describe the principles of applied radio-biology; and define the basics of an integrated radiation protection management program (Cross-listed with CEM 539).

3 credits, semester varies

HPH 650 Safety Engineering & Management

The course is designed to provide practical knowledge of the fundamentals of occupational and environmental health and safety, including safety engineering regulations, codes and practices, safety program administration, recognition of hazards and implementation of hazard controls (Cross-listed with CEM 541).

3 credits, semester varies

HPH 651 Environmental & Occupational Health Laws & Agencies

This survey course will introduce the legal parameters involved in occupational and environmental health and safety including statutory considerations on federal, state, and local levels; common law; and industry standards. Practical tools such as document retrieval, familiarity with governmental agencies, and research techniques will also be covered. Emphasis will be places on decision making and innovative problem solving in an area where the laws are constantly changing, some retroactively (Cross-listed with CEM 542).

3 credits, semester varies

HPH 652 Occupational Safety & Health for Special Groups

This course will address the occupational health and safety issues surrounding populations known for their population size, diversity and magnitude of exposure. While there are many environmental hazardous aspects in the workplace, work populations are affected by agents specific to the nature of the occupations. The risk of those exposed requires special knowledge, monitoring and regulations. Upon completion of this course, students will be able to identify the occupational safety and health hazards for the following special groups: health care workers, firefighters, construction workers, agricultural workers and disabled workers. Students will be provided with a historical perspective of safety and health in the workplace. Following the introductory sessions, the course will be divided into sessions that will focus on select occupational groups and will identify the hazards, regulations and preventive interventions specific to these groups (Cross-listed with CEM 543).

3 credits, semester varies

HPH 653 Introduction to Homeland Security

The course is a combination of lectures and laboratory experience to introduce students to critical issues and assess needs for homeland security. The course includes invited lectures by experts on special topics such as fundamentals of nuclear, chemical, and biological weapons and the associated threat to the transportation of goods and the public. The students will learn about cyber security, devices to safeguard materials from terrorist threats, safety of nuclear power plants and water supply, forensics and emergency preparedness. The students will submit a term paper on a selected topic in lieu of the final exam. (Cross-listed with EST 550).

3 credits, semester varies

HPH 654 Nuclear Safeguards & Security

The course is intended to familiarize students with the fundamentals of nuclear physics, radiation, mining, weapons, and fuel cycle, other than producing electricity, as it pertains to nuclear power plants. Topics include nuclear detection, devices to safeguard nuclear materials from terrorist threats, needed physical protection for safe handling and its relevance to Homeland Security. The course combines lectures with hands-on experience at the newly installed nuclear detection facility located at the nearby United States Department of Energy's Brookhaven Laboratory. (Cross-listed with EST 553).

4 credits, semester varies

HPH 655 Clinical & Biological Weapons: Safeguards & Security

The course deals with the fundamentals of chemistry and biochemistry related to chemical weapons (CW) and biological weapons (BW) that could be used by terrorists. Topics include CW and BW history, production, control, detection, identification, and emergency response measures to deal with intended or unintended releases and escape, and security measures to protect and control stockpiles. (Cross-listed with EST 554).

3 credits, semester varies

HPH 656 Risk Assessment, Regulation & Homeland Security

The course focus is on risk assessment associated with nuclear, chemical, and biological weapons as it relates to Homeland Security. Topics include air dispersion, uncertainty analysis, exposure measurements, epidemiology, toxicology, regulatory issues, risk management, risk communication, risk perception, and risk preparedness. The course will also cover laws and regulation, discouraging terrorism, and disaster preparedness, various acts passed by the U.S. Congress to regulate water, air, and controlled substances. (Cross-listed with EST 560).

4 credits, semester varies

HPH 657 Demographic Economics I

This course deals with the economics of the family. It utilizes recently developed techniques in economics and demography to deal with questions concerning marriage, divorce, fertility, contraception, the intrafamily distribution of resources, and the intergenerational distribution of resources. Students will do original theoretical and empirical research under the professor's supervision. Pre-requisite: ECO 501, graduate standing in the Economics Department, or permission of the Graduate Program Director. (Cross-listed with ECO 642).

0-3 credits, spring semester

HPH 658 Use Of Remote Sensing & GIS in Environmental Analysis

An introduction to the use of aerial and satellite imagery in environmental analysis and the manipulation of geographic data sets of all types using Geographic Information Systems. This course is designed to teach students in archaeology, physical anthropology, and related disciplines, how satellite imagery combined with various maps can be manipulated using GIS software to perform powerful geographic analysis. Although students are eventually likely to use these tools in many different parts of the world, this course focuses on Long Island as a research area, and each student designs and completes a research project on a particular section of the area, focusing on the habitats of local wildlife, the locations of archaeological sites, coastal regimes, etc. This course presumes computer literacy and familiarity with database management (Cross-listed with ANT 526).

3 credits, spring semester

HPH 659 Biology of Cancer

A short course with the emphasis on cancer as a disease of man. Lectures address human cancer as seen by the clinician and as basic research relates to human disease. This course provides students with a link between courses in cell and molecular biology and the application of this basic information to tumor management. (Cross-listed with HBM 522.)

1 credit, spring semester, even years

HPH 661 Methods of Socio-Technological Decision-Making

Application of decision-making techniques to analyze problems involving technology, particularly its social impacts. Areas of study include decision making under uncertainty, decision making in a passive vs. active environment, sequen-

tial decisions, estimation payoffs, forecasting, and technology assessment. These systems analysis techniques are used to formulate and solve a variety of socio-technological problems, especially those that arise in educational, industrial, and environmental professions. (Cross-listed with EST 581.)

3 credits, semester varies

HPH 662 Systems Approach to Human-Machine Systems

System concepts (feedback, stability, chaos, ergonomics) and analytical tools applied to dynamic systems in which technologies and/or natural environments interact with human users, regulators, or designers. Examples: ecological systems, nuclear power plant operations, space shuttle missions, computer/web technologies, regional planning. Students prepare a systems design study of an industrial, educational, or environmental device, technology, or management system. (Cross-listed with EST 582.)

3 credits, spring semester

HPH 663 Waste Management: Systems & Principles

Technologies and policy options in waste management, emphasizing recycling, incineration, landfilling, and source reduction options for municipal solid waste on Long Island. Problems concerning paper, glass, plastic, organic materials, and other waste stream components. Environmental impacts and economics of landfills, materials recovery facilities, and waste-to-energy systems. The institutional and regulatory climate. Current and planned practices in the region. Hazardous wastes. (Cross-listed with CEY 597.)

3 credits, semester varies

HPH 664 Economics of Health

An overview of market failures and peculiarities of the health market. We develop tools necessary for studying the health market from efficiency and social welfare perspectives. Incorporate key market specific differences into economic models, like asymmetric information and agency, imperfect information, and forms of intervention. Covers theoretical and econometric tools necessary for evaluation of the market. Supply and demand analysis of the market for health services. Pre-requisite: Permission of instructor. (Cross-listed with ECO 646.)

3 credits, fall semester

HPH 665 Health Economics

This course applies advanced economic theory and econometrics to issues within the health market in more detail. Theoretical and econometric analysis of the health care delivery system, such as the demand for medical services, the supply and distribution of physician services, hospital behavior, third-party insurance reimbursement, national health insurance and cost, price inflation, and welfare economics and policy analysis. Pre-requisite: Permission of instructor. (Cross-listed with ECO 645.)

2 credits, spring semester

HPH 671 Marine Pollution

Review of the physical and chemical characteristics and speciation in the marine environment of organic pollutants, metals and radionuclides including bioavailability, assimilation by marine organisms, toxicity, and policy issues. Pre-requisite: MAR 502 and MAR 503. (Cross-listed with MAR 512.)

3 credits, fall semester

HPH 672 Marine Management

The course discusses waste management issues particularly affecting the marine environment. Topics include ocean dumping, sewage treatment, fish kills, beach pollution, and nuisance algal blooms. Techniques for managing the waste stream are presented. (Cross-listed with MAR 514.)

3 credits, spring semester

HPH 673 Groundwater Problems

Discussion of the hydraulic processes and technologies that are central to the management and monitoring of groundwater resources including special problems of coastal hydrology and saltwater intrusion, as well as the fate of contaminants. Remediation approaches are also examined. (Cross-listed with MAR 521.)

3 credits, semester varies

HPH 675 Environment & Public Health

Review of the interactions of humans with the atmosphere and water resources, especially in the Long Island coastal community. An introduction is provided to the field of environmental health and the practices relevant to an urban and suburban and coastal setting. (Cross-listed with MAR 525.)

3 credits, spring semester

HPH 676 Environmental Law & Regulation

This course covers environmental law and regulations from inception in common law through statutory law and regulations. The initial approach entails the review of important case law giving rise to today's body of environmental regulations. Emphasis is on environmental statutes and regulations dealing with waterfront and coastal development and solid waste as well as New York State's Environmental Quality Review Act (SEQRA) and the National Environmental Policy Act (NEPA) (Cross-listed with MAR 536.)

3 credits, semester varies

HPH 683 Air Pollution & Air Quality Management

The effects of air pollution on the environment and public health are explored. Primary pollutants, such as particulates, oxides of sulfur, nitrogen and carbon, hydrocarbons, lead and CFS's are considered, as are secondary pollutants, such as sulfuric acid, PAN, and surface ozone. The effect of the atmospheric conditions on the dilution and dispersion of pollutants and the impact of pollution on the global atmosphere are explained. Air pollution disasters and the impacts and ramifications of the Clean Air Act of 1970, its 1990 amendments, and recent international accords are discussed. Case studies of air pollution reduction, management, and regulation in local industry are included. Other contemporary topics include the

loss of stratospheric ozone and global warming due to man's activities (Cross-listed with EST 584.)

3 credits, spring semester

HPH 684 Environmental & Waste Management in Business & Industry

Environmental and waste management practices in industrial and other institutional settings. Technologies of hazardous waste prevention, treatment, storage, transportation, and disposal. Information systems and software tools for environmental audits, regulatory monitoring and compliance and cost estimation. Recycling programs, air, land and water emissions controls and permits; employee health, safety and education; quality management. Field trips to several long island institutions. (Cross-listed with EST 586.)

3 credits, semester varies

HPH 686 Risk Assessment & Hazard Management

A case study approach to the assessment of risk and the management of natural and technological hazards, with emphasis on those that can harm the environment. The course focuses on technological hazards involving energy, transportation, agriculture, natural resources, chemical technology, nuclear technology and biotechnology, and on natural hazards such as climatic changes, droughts, floods, and earthquakes. The first part of the course consists of readings on risk assessment and hazard management and discussion of published case studies. During the second part of the course, students conduct their own case studies and use them as the basis for oral and written reports. (Cross-listed with EST 593.)

3 credits, spring semester

HPH 687 Diagnosis of Environmental Disputes

Diagnosis of disagreements about environmental and waste problems. Tools for evaluating disputes about (1) scientific theories, and environmental models, (2) definitions and analytical methodologies for estimating risks, real cost, net energy use, and life-cycle environmental impact, (3) regulatory and legal policy, (4) citing of controversial environmental facilities and (5) fairness and other ethical issues. These diagnostic tools brought to bear upon case studies of population prevention, recycling, nuclear waste disposal, and climate change Pre-requisite: EST 581. (Cross-listed with EST 594.)

3 credits, semester varies

HPH 688 Principles of Environmental Systems Analysis

This course is intended for students interested in learning systems engineering principles relevant to solving environmental and waste management problems. Concepts include compartmental models, state variables, optimization, and numerical and analytical solutions to differential equations (Cross-listed with EST 595).

3 credits, fall semester

HPH 689 Simulation Models for Environmental & Waste Management

This course is intended for students interested in developing computer models for technology assessment and for environmental and waste management. Concepts developed in EST

595 Environmental Systems Engineering and Analysis will be applied to real world problems. Techniques in model development will be presented in the context of applications in surface and groundwater management, acid rain, and health risks from environmental contamination. Pre-requisite: EST 595 or permission of instructor. (Cross-listed with EST 596).

3 credits, spring semester

Time and Location of Courses

Most courses are taught on the Health Sciences Center campus and are offered in the late afternoon or early evening.

Student Progress

The following grading system will be used in the Graduate Program in Public Health: A (4.0), A- (3.67), B+ (3.33), B (3.00), B- (2.67), C+ (2.33), C (2.00), C- (1.67), and F (0.00). Students must maintain an overall 3.0 average in the core. All courses in the concentration must receive a B or better. The Program is a rigorous, part-time course of study, and students must be able to devote sufficient time to meet the performance standards required. The Program is designed primarily to be part-time. If the student carries 7-8 credits per semester, including two summers, the Program can be completed in two years.

To ensure that students are meeting the curriculum requirements of the Program, each student must complete a Plan of Study Form every semester. The form must be signed by the student's advisor.

Time Limits

Not including granted leaves of absence, all graduate requirements towards the M.P.H. degree must be completed within five years from matriculation in the Program.

Academic Integrity

Stony Brook University holds itself, its faculty, and its students to high standards of academic integrity. You can rest assured that the University will protect you as well as it can from any attempts by a classmate to commit acts of academic dishonesty. In addition, you are expected to know and comply with the University's academic integrity policies.

As it becomes easier to obtain materials on disk or on the Internet to use for your assignments, remember that the risk of inadvertent plagiarism also increases. Be sure that the work you submit for your courses is your own, and if there is any doubt about what is allowable in a class, be sure to ask your instructor. Always avoid the following:

- Copying someone else's writing word-for-word, even if it constitutes only some of your paper.
- Paraphrasing someone else's writing too closely, even if it constitutes only some of your paper.
- If there is any doubt about whether your submission is too close a paraphrase, check with your instructor before turning it in.

- Downloading from electronic databases, encyclopedias, or websites and submitting the product as your own work, even if it constitutes only some of your paper.
- Writing a paper together with someone else in the course (unless the instructor expressly allows collaborative work).
- Allowing someone else to write your paper or part of it.
- Submitting all or part of a paper obtained from a commercial paper mill.
- Presenting someone else's idea as your own without properly citing it.
- Submitting the same paper in more than one course without permission of the instructors.

As is true in any scholarly work, quoting someone else's writing is allowable, but only if formal conventions for quoting and citing are strictly followed. Remember, though, that a paper assignment that asks you to develop an idea and express it in your own words should do just that. If you quote other people's work at all, do it sparingly. The work you are graded on should be your own.

Attendance Requirements

Attendance is mandatory, unless there is a medical reason or the student is excused by the Program Director or course instructor.